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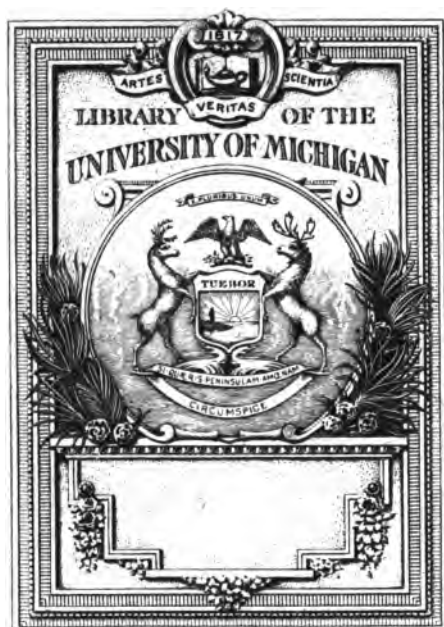
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DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 1

CENTRAL AIR MAIL
DIVISION
DEC 1 1904

MAPS OF SEGREGATED COAL LANDS

IN THE

McALESTER DISTRICT, CHOCTAW NATION,
INDIAN TERRITORY,

WITH

DESCRIPTIONS OF THE UNLEASED SEGREGATED COAL LANDS.

BY

JOSEPH A. TAFF.

Bids for the purchase of tracts within this district will be opened by the Commissioner of Indian Affairs, at his office in Washington, at 2 o'clock p. m. (eastern time), on Monday, October 3, 1904.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1904.

U. S. DEPARTMENT OF THE INTERIOR.

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General

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ILLUSTRATIONS.

Map of McAlester district (north sheet) showing segregated coal lands and coal outcrops.....	At end.
Map of McAlester district (south sheet) showing segregated coal lands and coal outcrops.....	At end.

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., May 31, 1904.

SIR: I have the honor to transmit herewith descriptive texts in duplicate on the unleased segregated coal lands in the McAlester district, Choctaw Nation, Indian Territory, prepared by Mr. Joseph A. Taff in accordance with instructions contained in your letter of May 16, 1904. It is proposed that this report be published as Circular No. 1 for the information of those submitting bids in the first sale of unleased segregated coal lands.

Very respectfully,

CHAS. D. WALCOTT, *Director.*

HON. E. A. HITCHCOCK,
Secretary of the Interior.

DESCRIPTION OF THE UNLEASED SEGREGATED COAL LANDS IN THE MCALESTER DISTRICT, CHOCTAW NATION, IND. T.

[Northern section corresponding to the northern map sheet.]

INTRODUCTORY REMARKS.

For convenience of description and also of publication of maps, the McAlester district is divided into a northern and a southern part. The maps are distinguished as the northern and southern sheets. The tracts of unleased lands designated for sale are colored blue, and numbered consecutively and correspondingly on the maps and in the descriptions for the entire district beginning with the northern sheet. The leased lands which are not to be sold until further action of Congress are bounded, each lease separately, by heavy black lines. On each lease is the name of the holder and the number.

The United States Geological Survey began the survey of the Choctaw coal field in 1897, starting at the west end. When the work had progressed to the east end of what is here known as the McAlester district a report on the economic features of the coal was published in Part III of the Nineteenth Annual Report, in 1899. In this work the entire field was carefully surveyed, the outcrops of the coal beds as well as other formations were traced, and their structure and positions beneath the surface determined to close approximations.

In the surveys incident to the segregation of the coal lands, the coal outcrops were retraversed and examined in the light of later mining developments.

Revision of previous locations and the extensions or the projection of new lines of railroad is, according to law, under the jurisdiction of the United States courts of Indian Territory. Any changes of existing lines or the building of new railroads on the segregated coal lands since March, 1903, have no authentic record in the Department of the Interior further than a map showing the plan of the proposed changes or projections proposed.

CONDITIONS GOVERNING THE CLASSIFICATION OF COAL BEDS.

In the selection of these lands for segregation and sale the following criteria were considered of essential importance:

1. The coal should be of a quality and hardness to create a demand for its use for commercial purposes.

2. It should be thick enough to be worked successfully.

3. Its structure or position and depth in the earth should assure profitable mining.

In the description of each tract or lease only those coal beds are considered to which the above qualifications can be applied.

In some coal regions it is found that certain coal beds are variable in thickness or quality or that both the thickness and quality are matters of uncertainty within short distances. It has been found that all beds of coal as well as other rocks are variable in thickness and composition within wide range.

The rocks in the McAlester district are folded in such a manner that the coal beds come to the surface or crop out in long stretches, and the thickness and quality of the beds have been proved by extensive prospecting or by mining throughout the entire surface occurrence. The folding of the strata also causes the coal to extend to depths reaching the limit of practical mining within a few miles at farthest from the outcrops of the beds. It is reliably certain that if particular beds of coal vary but slightly both in quality and thickness in various directions along outcrops throughout the district, as is the case with the Hartshorne and McAlester beds, the same will be equally permanent within a few miles from the outcrop.

In the case of the Upper Hartshorne bed it appears that there is simply a variation in thickness without material change in composition. Since it is known to be locally variable, not only in this district but in the Wilburton and Howe districts as well, it is neither correct nor profitable to assume that it is present in workable thickness far from the land where its conditions are known.

The local coal bed southwest of South McAlester is located only in the vicinity of its known occurrence.

Locally variable thin beds of coal have been shown by drill records and by surface prospecting to occur in the district at various positions in the rocks above the Hartshorne coal. The coal in these beds can not be profitably worked at present and will not be in demand until a time when the thicker beds are exhausted. This time is so indefinitely distant in the future that their presence is not considered to add any value to the lands.

DESCRIPTION OF THE COAL BEDS.

HARTSHORNE COAL.

There are four beds of commercially valuable coal in the McAlester district. The lowest one of these, which is known as the Hartshorne bed, is believed to be of workable thickness throughout the district. The rocks are folded in such a manner that the coal comes to the surface in a crop 50 miles in length. The coal has been very extensively prospected near the outcrop and is being mined at many localities.

With the exception of a small area which has been excluded from the segregated lands, the Hartshorne coal so far as known ranges in thickness between 3 and 6 feet. An average is estimated to be a little above 4 feet.

The Hartshorne coal, so far as known in the lands selected, is invariably clear of shale or other detrimental rock, and has been found to be uniformly of good quality. It has been most extensively mined at Hartshorne and vicinity in the Hartshorne basin. Average samples of the coal coming from different parts of the Hartshorne mine were collected and analyzed. An analysis also of coal from the same bed, 2 miles east of Krebs, is given below for comparison.

Proximate analysis of the Hartshorne coal.

Location of mine.	Moisture in vacuo over H_2SO_4 , 20 to 24 hours.	Volatile combustible matter, less moisture in vacuo.	Fixed carbon.	Ash.	Sulphur.	Phosphorous.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Shaft No. 1, Hartshorne.....	1.68	41.00	51.91	5.41	2.72	0.012
Hughes's mine, 2 miles east of Krebs..	1.04	37.96	55.84	5.16	2.00	.012

The roof of the Hartshorne coal is usually a hard, slaty shale, which is locally replaced by sandstone, and the floor is a compact shale or clay.

UPPER HARTSHORNE COAL.

The second coal bed in the district occurs about 50 feet above the Hartshorne coal, and may be described as the Upper Hartshorne bed. This coal is more variable in thickness than the one below. In the eastern part of the district it is not known to be of workable thickness. In the western part, west of McAlester, it is approximately 5 feet, while the lower bed is a little more than $4\frac{1}{2}$ feet in thickness. Eastward, also, in the adjoining Wilburton district the Upper Hartshorne thickens to $4\frac{1}{2}$ feet.

This bed is practically the same in physical aspect and quality as the coal of the lower bed. An analysis of the Upper Hartshorne coal from the mine in the west side of the town of Wilburton, is shown in the following record:

Proximate analysis of the Upper Hartshorne coal.

Location.	Moisture.	Volatile combustible matter.	Fixed carbon.	Ash.	Sulphur.	Phosphorus.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
West side of Wilburton, Ind. T	1.48	38.15	50.76	9.66	1.38	0.052

As with the lower Hartshorne coal, the roof in this case is usually a hard, slaty shale, and the floor consists of compact clay or shale.

MCALESTER COAL.

The McAlester coal is the third bed of workable thickness in the district and occurs from 1,200 to 1,300 feet above the Hartshorne coal, considered vertically in the rock section. Being higher in the rocks it has a greater length of outcrop and is generally more advantageously disposed structurally, so that relatively larger areas can be successfully mined. The bed has an outcrop length of more than 70 miles in the southern part of the district.

The McAlester coal varies in thickness from a little above 4½ feet in the west end to about 3 feet in the east end of the district. It contains no shaly partings or earthy impurities, so far as known. The quality of the McAlester coal is uniformly high, as shown by the following analysis of the coal from mines at Krebs and McAlester:

Proximate analysis of the McAlester coal.

Location of mine.	Moisture in vacuo over H ₂ SO ₄ 20 to 24 hours.	Volatile combustible matter, less moisture in vacuo.	Fixed carbon.	Ash.	Sulphur.	Phosphorus.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Shaft No. 10, Krebs	1.74	37.00	56.86	4.40	0.65	0.014
Sample's slope, 1 mile west of McAlester.....	2.08	37.52	56.02	4.38	.80	.016

The McAlester as well as the Hartshorne coals are coked successfully, making a coke of good grade. This is attested by the coking plants in operation at Krebs and Alderson.

By comparing the analyses of the Hartshorne and McAlester coals it will be seen that the latter is higher in quality. The McAlester coal is also slightly harder, having an advantage both in mining and shipping.

Fourth and upper coal bed.—The fourth and highest coal in the McAlester district occurs in the basin southwest of McAlester. It occupies a position in the rocks closely related to that of the Witteville coal, in the Howe district, which is in the eastern part of the Choctaw coal field, and to that of the coal of the McCurtain district, on Jones Creek, a few miles north of the McAlester district. This bed has the same kind of roof and floor, and the quality of the coal also appears to be essentially the same as the Witteville and Jones Creek coals. The thickness is probably a little less than that of the Jones Creek, it being nearly 3 feet. It is admirably suited for mining, the outcrop being near to and parallel with the Missouri, Kansas and Texas, and the Choctaw, Oklahoma and Gulf railways. Thicker beds being in the vicinity, it has not yet been mined except to a small extent for local use.

STRUCTURE OF THE McALESTER DISTRICT.

The structure of the rocks in the McAlester district is such that the coal beds are well situated for mining. A wide and deep downward fold known as the Kiowa syncline enters the southeast part of the district bearing toward the northeast. In the vicinity of Dow, in the southeastern part of T. 5 N., R. 16 E., the fold turns eastward, forming a shallow spoon-like basin, known locally as the Hartshorne basin. The Hartshorne coal is accessible throughout this basin.

Lying next to and north of the Hartshorne basin, there is an upward or anticlinal fold which has been in part turned over toward the north. It is known as the McAlester anticline. This fold bears nearly due west from the border of the district to Krebs, where it is deflected northward and then westward, the central line or axis passing through the town of McAlester. From McAlester it bears toward the southwest parallel with the Choctaw, Oklahoma and Gulf Railroad to the boundary of the district. Considering the rocks lengthwise in the fold, it is seen that the coal pitches downward toward the west 2 miles east of Krebs, and continues eastward beneath the surface until it reaches the Missouri, Kansas and Texas Railway in the northern part of McAlester, where it rises abruptly to the surface. It again descends, pitching toward the southwest in the axis of the fold at the Busby mine in the southeast quarter of sec. 33, T. 6 N., R. 14 E. Considering the coal crosswise in the McAlester fold, it is seen that, as a general rule, the nearer the coal approaches the axis of the fold the steeper it is inclined. The Hartshorne coal at its outcrop, it will be observed, dips at greater angles than does the McAlester, which crops out farther away from the center of the fold. Throughout the south side the coal beds have not been greatly disturbed, the dips being usually between 10° and 20° , except in that part of the district west of McAlester, where the inclination locally reaches 40° .

The conditions of structure are different in the north side of the fold. From the vicinity of Carbon, eastward, the Hartshorne coal dips northward between 90° and 45° , and going toward the north from the outcrop the inclination or dip decreases rapidly, reaching between 15° and 30° at the outcrop of the McAlester coal. There is a small basin which pitches at a low angle toward the east immediately northwest of Carbon, where the McAlester coal is well situated for mining operations. From sec. 36, T. 6 N., R. 15 E., westward in the north side of the fold the coal beds are steeply tilted. From McAlester westward a fault extends parallel with and very near the axis of the fold upon the north side displacing the Hartshorne coals. Remnants of these beds may be found in place along the fault, but the rocks as a whole, including the coals, have been displaced downward upon the north side with respect to the same beds upon the south side.

The same fault, or one in strike with it, bears eastward from McAlester, disturbing and misplacing the McAlester coal in the north side of sec. 33, T. 6 N., R. 15 E. In the excessively disturbed tracts above referred to the coal beds are not considered to be of any economic value.

A flatter upward fold bears southwestward from the vicinity of Alderson to and beyond Savanna. The McAlester coal pitches toward the southwest in the axial part of this fold at a low angle until near the border between the north and south sheets, where it begins to rise and should come to the surface again in the vicinity of Savanna. It is estimated that the McAlester coal is accessible along the axial part of this fold, from which it dips at low angles toward the northwest and southeast.

Between this fold and the McAlester anticline there is the basin southwest of South McAlester in which the uppermost coal of the district is exposed.

DESCRIPTION OF SEGREGATED COAL LANDS NOT UNDER LEASE IN THE SOUTHERN SECTION, CORRESPONDING TO THE SOUTH MAP SHEET.

The southern part of the McAlester district contains two known workable beds of coal. These are the Hartshorne and McAlester beds, which are connected in outcrop with the same beds cropping out in the northern section of the district southeast of Hartshorne.

THE COAL BEDS.

HARTSHORNE COAL.

The lower of the Hartshorne coal beds is believed to be of workable thickness in the southern part of the district though its occurrence is known only by prospecting. Its outcrop is continuous throughout the southeast side of the district and it is believed that it occurs also southwestward from the vicinity of Savanna. This bed is reported by the prospector to be 4 feet to 4 feet 9 inches thick in the southeastern side of the district. It is for the most part steeply inclined at the outcrop, but the dips grow less as it passes downward. It has been prospected to a considerable extent, but it has not been exploited for commercial uses. The roof of the coal, as in other parts of the Choctaw coal field where the bed is found, is usually of hard shale and the floor is a compact clay.

It is not believed that the quality of the coal is materially different from that of the same bed in the mines at Hartshorne and near Krebs, which are about 6 miles northeast of the Savanna district. The analyses of the Hartshorne coal from these localities are given in the description of the northern section of the district.

Considering that the Hartshorne coal in this district is the same as that of the corresponding coal in the McAlester, Wilburton, and Howe districts it should produce a good quality of coke. Coking tests, however, of the coal in this section have not been made.

The second or upper Hartshorne bed is not known to be of workable thickness in the district. In the McAlester and Howe districts it is locally too thin to be mined successfully, and in the Lehigh district it is not known to occur. This coal bed should not be considered here or elsewhere until its quality and thickness are known to be sufficient to make it economically workable.

MCALESTER COAL.

The McAlester coal bed, like that of the Hartshorne, is connected in outcrop with the same bed in the northern part of the McAlester district. It crops out along the southeast side of this district and in a

long oval southwestward from the vicinity of Savanna, in all a distance of about 40 miles. The inclination of the McAlester bed from its outcrop is less than that of the Hartshorne and it is being mined in both sides of the district. The coal varies in thickness from about 3 feet to 4 feet 6 inches and maintains the good quality which it is known to have in the northern part of the McAlester district.

STRUCTURE OF THE ROCKS.

A relatively wide and deep downward fold or syncline extends in a northeast-southwest direction across the Savanna district, the axial or central part passing through the town of Kiowa. It is known as the Kiowa syncline. From the vicinity of Kiowa this syncline pitches, becoming deeper northeast and southwest from Kiowa. Both the Hartshorne and McAlester coals dip toward the northwest from their outcrops in the southeast side of the fold, becoming gradually flatter until they attain practically horizontal positions at depths of 2,000 to 3,000 feet beneath the surface in the central part of the basin. The same beds rise toward the northwest from the axial part of the fold, reaching the surface again in the Savanna anticline. The coal beds in this upward fold pitch toward the northeast and southwest along the axial part at relatively low dips. Toward the northwest and southeast, however, in the sides of the fold the dips are steeper, but decrease in inclination, reaching 10 to 20° in dip at depth of 1,500 to 1,700 feet beneath the surface.

DESCRIPTION OF TRACTS, NORTHERN MAP SHEET.

TRACT NO. 1.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	18	4	16	40
SE. $\frac{1}{4}$	18	4	16	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	4	16	80
Lot 4.....	18	4	16	38. 21
NE. $\frac{1}{4}$	19	4	16	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	4	16	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	4	16	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	4	16	80
Lots 3 and 4.....	19	4	16	76. 14
Lot 1.....	19	4	16	38. 15
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	19	4	16	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	4	16	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	4	16	40
Total area.....				912. 50
Occupied by railroad.....				9. 89

Both the Hartshorne and McAlester coals are found in this tract. The former is estimated to be about 1,300 feet beneath the latter. The structure of the rocks is such that the McAlester coal outcrops in three lines passing across the tract in a northeast-southwest direction and forms a narrow basin a little south of the center of section 19. From the N. $\frac{1}{4}$ of the N. $\frac{1}{4}$ of sec. 19 this coal dips northward from its outcrop about 25° , and is at an estimated depth of 1,500 feet at the north limit of the tract.

The Hartshorne coal crops out near the south edge of the tract, dipping northward 30° to 60° . It is estimated that it rises to within a few hundred feet of the surface near the middle of the N. $\frac{1}{4}$ of sec. 19 and again descends toward the northwest.

The McAlester coal underlies approximately 640 acres of the tract, while the Hartshorne coal underlies all except about 60 acres at the extreme south side.

TRACT NO. 2.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	4	16	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	4	16	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	4	16	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	4	16	80
W. $\frac{1}{2}$	17	4	16	320
NE. $\frac{1}{4}$	20	4	16	160
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	4	16	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	4	16	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	4	16	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	21	4	16	80
Total area				960
Occupied by railroad				8.32

Both the Hartshorne and McAlester coal beds crop out across the southeast side of this tract, dipping northwestward at steep angles. A narrow and rather deep basin containing these coal beds extends in a northeast-southwest direction, crossing near the center of the N. $\frac{1}{4}$ of section 20. It is estimated that the McAlester coal rises to within a few hundred feet of the surface in the SE. $\frac{1}{4}$ of the SE. $\frac{1}{4}$ of section 17, and again descends toward the northwest, reaching a depth approximating 1,500 feet at the northwest corner of the tract. The McAlester coal outcrops also in the northwest corner of section 20, pitching toward the northeast.

The Hartshorne coal conforms in structure with the McAlester above described, but is everywhere approximately 1,300 feet beneath it. The area of the McAlester coal in this tract is approximately 620 acres, and that of the Hartshorne about 820 acres.

TRACT NO. 3.

	Section.	Township north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	4	16	80
SE. $\frac{1}{4}$	8	4	16	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	8	4	16	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	9	4	16	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	4	16	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	16	4	16	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	4	16	80
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	4	16	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	16	4	16	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	16	4	16	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	4	16	40
NE. $\frac{1}{4}$	17	4	16	160
Total area				960
Occupied by railroad				14.03

Both the Hartshorne and McAlester coals outcrop across the southeast end of tract No. 3, dipping toward the northwest 70° to 80° . After passing beneath a narrow basin extending northeast to southwest near the center of section 16, the McAlester coal approaches to within a few hundred feet of the surface in the extreme northwest corner of the section. From the northwest corner of section 16 the coal dips again toward the northwest and reaches a depth of approximately 1,500 feet at the northwest side of the tract. The Hartshorne coal is considered to be everywhere at its usual depth of approximately 1,300 feet beneath the McAlester coal.

The area of the McAlester coal is about 860 acres, while that of the Hartshorne is about 900 acres.

TRACT NO. 4.

	Section.	Township north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	4	16	40
Lot 2	4	4	16	39.63
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	4	16	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	4	16	80
Lot 3	4	4	16	39.53
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	4	16	80
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	5	16	80
Total area				399.16

Leased lands of the Arkansas and McAlester Coal Company lie between the outcrop of the McAlester coal and this tract. The depth of the coal in the southeast side of the tract is approximately 1,500 feet.

TRACT NO. 5, PARCEL NO. 1.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	4	17	40
Occupied by railroad, in SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$, sec. 3, T. 4 N., R. 17 E.				1.61

This parcel of tract No 5 contains only Hartshorne coal, which outcrops across its south side. It contains approximately 30 acres of coal which is easily accessible.

TRACT NO. 5, PARCEL NO. 2.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	5	15	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	5	15	40
Area of parcel				120

This parcel is underlain by the Hartshorne coal and is surrounded entirely by leased lands. The coal is estimated to be 800 feet beneath the surface in the northeast corner. The dip is toward the south 20°.

TRACT NO. 5, PARCEL NO. 3.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	5	16	80
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	5	16	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	5	16	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	5	16	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	5	16	40
Area of parcel				320
Occupied by railroad				0.58

This parcel contains only the Hartshorne coal, except possibly a small area of the McAlester coal in the extreme southwest corner. It

is entirely surrounded by leased lands. In the southeast and northeast corners of the tract the Hartshorne coal is at a depth of about 1,000 feet. The coal in this tract dips about 10° toward the northwest at the south end, toward the west in the middle, and toward the southwest at the north end.

TRACT NO. 5, PARCEL NO. 4.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	5	17	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	5	17	80
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	27	5	17	160
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	28	5	17	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	5	17	40
Area of parcel				480
Occupied by railroad				3.97

This parcel lies in the middle of the Hartshorne basin and contains only the Hartshorne coal. It is surrounded entirely by leased lands, and the coal lies practically flat at a depth of 300 to 800 feet beneath the surface. The coal pitches, with the basin, westward.

Total area of tract No. 5 is 960 acres.

TRACT NO. 6.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	12	5	13	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	5	13	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	12	5	13	80
All of	13	5	13	640
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	24	5	13	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	5	13	40
Total area				960
Occupied by railroad				12.44

Both the Hartshorne and McAlester coals occur in this tract, but the latter only is accessible. The McAlester coal outcrops or is near the surface in the northeast corner of the tract. The coal dips toward the south and west. Toward the southwest and south especially the dip of the coal is but a few degrees, the bed reaching approximately 1,000 feet beneath the surface at the extreme south end. The whole tract is underlain by coal.

TRACT NO. 7.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 3	5	5	14	38.76
Lot 4	5	5	14	38.53
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	5	14	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	6	5	14	40
SE. $\frac{1}{4}$	6	5	14	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	5	14	40
Lot 7	6	5	14	38.76
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	1	5	13	40
NE. $\frac{1}{4}$	12	5	13	160
N. $\frac{1}{4}$ of SE. $\frac{1}{4}$	12	5	13	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	5	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	5	13	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6	14	80
N. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	6	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	6	14	40
Total area				956.05

Only the McAlester coal, it is believed, is accessible in this tract, and it dips at steep angles toward the northwest and west. A larger area of the coal is accessible where the dips are lowest in sec. 12, T. 5 N., R. 13 E. This tract contains approximately 640 acres of coal, but with the exception possibly of that in section 12 it can be mined only by slopes on account of the steep dip.

TRACT NO. 8.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	17	5	14	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	5	14	40
SW. $\frac{1}{4}$	17	5	14	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	17	5	14	80
SE. $\frac{1}{4}$	18	5	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	5	14	80
Lots 3 and 4	18	5	14	77.90
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	5	14	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	5	14	80
Lots 1 and 2	19	5	14	78.17
Total area				956.07
Occupied by railroad				8.71

Lands of the J. F. McMurray leases lie between this tract and the outcrop of the McAlester coal. This coal is 800 to 1,000 feet beneath the surface in the extreme northwest corner of the tract. The coal dips toward the southeast at 10° to 15° . A coal bed, 30 inches to 3 feet in thickness, crops out in a northeast-southwest direction, passing near the center of section 18 and the center of the west side of section 19, dipping toward the southeast 10° to 15° . The tract contains approximately 750 acres of this coal.

TRACT NO. 9.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	5	14	40
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	10	5	14	160
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	11	5	14	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	1	5	14	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	5	14	80
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	2	5	14	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	5	14	40
Total area				480
Occupied by railroad				15.87

The leased lands lie between the outcrop of the McAlester coal and this tract. This coal is at a depth of approximately 1,500 feet in the north side of the tract, and it can not be exploited profitably except from mines located upon the adjacent leased lands.

TRACT NO. 10.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	5	14	80
SE. $\frac{1}{4}$	10	5	14	160
SW. $\frac{1}{4}$	10	5	14	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	5	14	80
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	11	5	14	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	5	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	11	5	14	80
SW. $\frac{1}{4}$	11	5	14	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	5	14	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	11	5	14	40
Total area				960

A single coal bed 30 inches to 3 feet in thickness crops out across the north side of the tract, dipping toward the south 10 to 15°. The Hartshorne and McAlester coals occur beneath it, but are beyond the reach of successful mining. The tract contains approximately 920 acres of workable coal.

TRACT NO. 11.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of South McAlester town site.</i>				
E. $\frac{1}{4}$ of NE. $\frac{1}{4}$	11	5	14	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	5	14	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	12	5	14	160
N. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	5	14	80
NW. $\frac{1}{4}$	12	5	14	160
N. $\frac{1}{2}$	13	5	14	320
				840
<i>Lands within South McAlester town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	5	14	40
N. $\frac{1}{4}$ of SE. $\frac{1}{4}$	12	5	14	80
				120
Total area				960
Occupied by railroad				18.45

Tract No. 11 contains the same coal as that in tract 10. The coal dips toward the south and west about 10°. It contains about 800 acres of workable coal.

TRACT NO 12.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	5	14	80
SW. $\frac{1}{4}$	13	5	14	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	23	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	5	14	40
SE. $\frac{1}{4}$	23	5	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	23	5	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	23	5	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	24	5	14	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	5	14	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	24	5	14	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	5	14	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	5	14	40
Total area.....				920
Occupied by railroad.....				18.76

This tract contains the same coal as that in Tract 11, the coal out-crops along the southeast side of the tract dipping toward the north-west about 10° . The tract contains, approximately, 620 acres of workable coal.

TRACT NO. 13.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	5	14	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	5	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	33	5	14	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	5	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	5	14	40
Total area.....				360

This tract contains the same coal as that of No. 12. The coal out-crops across the southeast side, dipping toward the northwest about 10° . This tract contains approximately 320 acres of coal.

TRACT NO. 14.

	Section.	Township north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	5	14	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	5	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	5	14	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	5	14	40
E. $\frac{1}{2}$	35	5	14	320
SW. $\frac{1}{4}$	35	5	14	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	35	5	14	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	5	14	40
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	5	14	160
Total area				960

The McAlester coal occurs beneath this tract at an estimated depth of 800 to 1,000 feet. The coal lies in a nearly flat position in the southeast corner, and gradually increases in dip toward the northwest, reaching finally about 10° .

TRACT NO. 15.

	Section.	Township north.	Range east.	Acres.
<i>Lands within South McAlester Townsite.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	12	5	14	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	5	14	40
NE. $\frac{1}{4}$	7	5	15	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	7	5	15	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	7	5	15	40
Lot 3	7	5	15	40.96
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	5	15	80
Lots 1 and 2	7	5	15	82.45
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	8	5	15	80
NW. $\frac{1}{4}$	8	5	15	160
Total				843.41
<i>Lands outside of South McAlester Townsite.</i>				
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	7	5	15	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	7	5	15	40
Total				80
Total area of tract				923.41

This tract contains the McAlester coal, which is about 1,300 feet beneath the northeast corner. The leased lands of the Osage Coal and Mining Company lie between this tract and the outcrop of coal. The coal in this tract can be exploited most profitably by mines located on the leased lands toward the northeast. The dip of the coal in this tract is toward the southwest about 10° .

TRACT NO. 16.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	7	5	15	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	8	5	15	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	5	15	80
SE. $\frac{1}{4}$	17	5	15	160
W. $\frac{1}{2}$	17	5	15	320
NE. $\frac{1}{4}$	18	5	15	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	5	15	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	5	15	40
Total area				960

Only the McAlester coal is accessible in tract 16. It lies about 1,100 feet beneath the east end in the southwest corner of section 16. The dip of the coal in this tract is toward the west about 10° .

TRACT NO. 17.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. W. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	5	15	40
E. $\frac{1}{2}$	19	5	15	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	5	15	80
N. $\frac{1}{2}$	20	5	15	320
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	5	15	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	5	15	80
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	21	5	15	80
Total area				960

Only the McAlester coal is accessible in this tract. It is estimated to be 800 to 1,000 feet beneath the east end in the northwest corner of section 21. The dip of the coal in this tract is toward the west about 10° .

TRACT NO. 18.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	25	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	5	14	40
SE. $\frac{1}{4}$	25	5	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	5	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	5	14	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	5	15	40
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	30	5	15	160
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	30	5	15	160
Lots 1, 2, 3, and 4	30	5	15	160.64
Total area				920.64

The McAlester coal is accessible in this tract. It lies in a nearly flat position in the southeast side and dips toward the northwest at gradually increased grades, reaching about 15° in the northwest side. The depth of the coal beneath the surface in the center of section 30 is estimated at 800 to 1,000 feet.

TRACT NO. 19.

	Sec. tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	36	5	14	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	5	14	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	5	15	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	5	15	40
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	5	15	160
Lots 1, 2, 3, and 4	31	5	15	160.72
Total area				920.72

This tract contains the McAlester coal which lies nearly flat in the northwestern part. The coal increases in dip toward the southeast, reaching approximately 8° . The coal near the center of section 36 is estimated to be at a depth of 800 to 1,000 feet.

TRACT NO. 20.

	Sec. tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	5	15	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	5	15	80
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	29	5	15	80
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	29	5	15	160
W. $\frac{1}{2}$	29	5	15	320
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	5	15	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	5	15	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	5	15	80
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	5	15	80
Total area				960

Tract No. 20 contains the McAlester coal, which lies nearly flat, at a depth of 800 to 1,000 feet.

TRACT NO. 21.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	20	5	15	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	5	15	80
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	27	5	15	80
All of	28	5	15	640
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	5	15	80
Total area				960

Only the McAlester coal is accessible in this tract, and dips at a low angle toward the west on the northwest side and toward the south on the southeast side, varying at angles of 10° to 15° . The coal in the north end is at an estimated depth of 800 to 1,000 feet.

TRACT NO. 22.

	Sec- tion.	Town- ship north.	Range east.	Acres.
N. $\frac{1}{2}$	2	5	15	314.56
S. $\frac{1}{2}$	2	5	15	320
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	35	6	15	160
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	6	15	40
Total area				834.56
Occupied by railroad				13.37

This tract contains only the Hartshorne coal which is beneath the surface. The structure of the coal in this tract is undulating. On the south and west sides the dip is toward the west, while the east side is toward the east. On the north side it lies nearly flat. The leased lands separate the tract from the outcrop of the Hartshorne coal. The coal is estimated to be within a few hundred feet of the surface near the center of the south side of sec. 35, T. 6 N., R. 15 E.

TRACT NO. 23.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Alderson town site.</i>				
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	10	5	14	80
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	11	5	14	160
N. $\frac{1}{2}$	14	5	14	320
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	20
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	15	5	14	80
Total				700
<i>Lands within Alderson town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	20
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	14	5	14	40
Total				60
Total area of tract				760

This tract contains only the Hartshorne coal, which dips toward the west and southwest at about 15° . The coal in the northeast corner of section 14 is estimated to be 600 feet beneath the surface. The leased lands separate this tract from the outcrop of the coal.

TRACT NO. 24.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	5	15	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	5	15	80
SW. $\frac{1}{4}$	26	5	15	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	5	15	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	26	5	15	80
E. $\frac{1}{2}$	27	5	15	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	27	5	15	160
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	5	15	80
Total area				960

Only the McAlester coal is accessible in this tract and is estimated to be 1,000 to 1,200 feet beneath the surface in the northeastern part of section 26. The coal here dips toward the south about 15° .

TRACT NO. 25.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	25	5	15	320
SW. $\frac{1}{4}$	25	5	15	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	5	15	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	25	5	15	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	5	15	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	5	15	80
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	5	16	80
Lots 1, 2, 3, and 4	30	5	16	158.96
Total area				958.96

This tract contains the McAlester coal which occurs at approximately 1,000 to 1,200 feet beneath the surface in the north side. The dips are toward the south 10° to 15° .

TRACT NO. 26.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	29	5	16	160
W. $\frac{1}{2}$	29	5	16	320
E. $\frac{1}{2}$	30	5	16	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	5	16	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	5	16	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	5	16	40
Total area.....				960

This tract contains the McAlester coal which occurs at approximately 1,000 feet beneath the surface in the north side. Dips are toward the south 10° to 15° in the northern part, becoming lower in the southern part.

TRACT NO. 27.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	5	16	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	5	16	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	5	16	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	28	5	16	80
SW. $\frac{1}{4}$	28	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	5	16	80
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	29	5	16	160
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	5	16	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	33	5	16	160
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	5	16	80
Total area.....				960

Tract No. 27 contains the McAlester coal, which occurs at approximately 900 feet beneath the surface in the northeast side. It dips toward the southwest 10° to 15° .

TRACT NO. 28.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1 and 2.....	3	4	16	80.83
S. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	4	16	80
S. $\frac{1}{4}$ of N. $\frac{1}{2}$	33	5	16	160
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	33	5	16	160
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	5	16	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	5	16	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	5	16	40
SW. $\frac{1}{4}$	34	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	5	16	80
Total area.....				920.83
Occupied by railroad.....				21.55

This tract contains the McAlester coal which crops out across the extreme east end, dipping toward the northwest about 15° . The dip gradually decreases toward the west, and the coal is at a depth of approximately 1,700 feet at the west end. The Hartshorne coal is estimated to be about 1,000 feet beneath the surface at the extreme southeast corner of this tract in the SE. $\frac{1}{4}$ of the NE. $\frac{1}{4}$ of section 3. The tract contains approximately 840 acres of McAlester coal, and is entirely underlain by the Hartshorne coal.

TRACT NO. 29.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	5	16	40
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	5	16	160
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	10	5	16	160
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	11	5	16	160
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	12	5	16	160
Lot 1.....	7	5	17	39.30
Total area.....				719.30
Occupied by railroad.....				2.07

Tract 29 contains the Hartshorne coal which crops out through its entire length of $4\frac{1}{2}$ miles. The coal dips steeply toward the north and can be mined successfully only by slopes from the outcrop. A little less than one-half of this tract contains no coal.

TRACT NO. 30,

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 2	3	5	16	39.53
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	16	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	3	5	16	80
SW. $\frac{1}{4}$	3	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	3	5	16	80
Lots 3 and 4	3	5	16	79.29
Lots 1 and 2	4	5	16	79.40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	4	5	16	80
SE. $\frac{1}{4}$	4	5	16	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	6	16	40
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	16	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	6	16	80
Total area				958.22
Occupied by railroad				15.30

Both the Hartshorne and McAlester coals occur in this tract. Only the McAlester coal is accessible, which crops out along the extreme southern border dipping toward the north about 20° . The dip gradually decreases toward the north and the coal is at a depth of approximately 1,500 feet at the northern border. The entire area of this tract contains coal.

TRACT NO. 31.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4	2	5	16	158.64
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	2	5	16	160
S. $\frac{1}{4}$	2	5	16	320
Lot 1	3	5	16	39.46
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	16	40
E. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	5	16	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	16	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	6	16	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	6	16	40
Total area				958.10
Occupied by railroad				15.30

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tract 30. The entire area of this tract contains coal.

TRACT NO. 32.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4	1	5	16	159.80
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	5	16	160
S. $\frac{1}{2}$	1	5	16	320
Lots 5, 6, and 7	6	5	17	114.70
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	6	16	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	36	6	16	160
Total area				954.50
Occupied by railroad				20.35

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tracts 30 and 31. The entire area of this tract contains coal.

TRACT NO. 33.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	5	17	80
Lots 1, 2, 3, and 4	6	5	17	159.23
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	5	17	80
SE. $\frac{1}{4}$	6	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	5	17	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	5	17	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	7	5	17	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	7	5	17	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	5	17	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	6	17	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	6	17	40
Lot 4	31	6	17	36.66
Total area				915.89
Occupied by railroad				22.83

Both the Hartshorne and McAlester coals are accessible in this tract, the former outcropping very near the southeastern corner and the latter nearly one-third of a mile farther north. The dip of the Hartshorne coal at the outcrop is 30° to 35° toward the north, while that of the McAlester is about 20° . In each case the dip decreases toward the north to about 10° on the northern border of the tract where the McAlester coal is about 1,500 feet below the level of its outcrop. All of the tract contains Hartshorne coal, while the area of the McAlester is about 750 acres.

TRACT NO. 34.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	5	17	40
Lots 1, 2, 3, and 4	5	5	17	165. 72
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	5	17	80
SE. $\frac{1}{4}$	5	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	5	17	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	5	17	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	5	17	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	5	17	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	5	17	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	32	6	17	160
Total area				925. 72
Occupied by railroad.....				20. 33

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tract 33. All of the tract contains Hartshorne coal, while the area of the McAlester coal is about 760 acres.

TRACT NO. 35.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4.....	4	5	17	165. 80
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	4	5	17	80
SE. $\frac{1}{4}$	4	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	5	17	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	5	17	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	5	17	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	9	5	17	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	5	17	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	5	17	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	33	6	17	160
Total area				925. 80
Occupied by railroad.....				17. 09

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tracts 33 and 34. The area of the Hartshorne coal is approximately 900 acres, while that of the McAlester is about 760 acres.

TRACT NO. 36.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	5	17	80
Lots 1, 2, 3, and 4	3	5	17	163. 80
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	3	5	17	160
S. $\frac{1}{2}$	3	5	17	320
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	5	17	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	34	6	17	160
Total area				923. 80
Occupied by railroad				29. 52

Both the Hartshorne and McAlester coals are accessible in this tract, the former outcropping very near the southern border and the latter nearly one-third of a mile farther north. The dip of the Hartshorne coal is about 45° toward the north, while that of the McAlester is several degrees lower. In each case the dip decreases toward the north to about 10° on the northern border of the tract where the McAlester coal is about 1,500 feet below the level of its outcrop. The area of the Hartshorne coal is approximately 890 acres, while that of the McAlester is about 680 acres.

TRACT NO. 37.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	5	17	80
SW. $\frac{1}{4}$ of NW $\frac{1}{4}$	1	5	17	40
Lots 1, 2, 3, and 4	2	5	17	163
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	2	5	17	80
SE. $\frac{1}{4}$	2	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	5	17	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	5	17	80
SE. $\frac{1}{4}$	35	6	17	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	6	17	80
Total area				923
Occupied by railroad				12. 21

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tract 36. The area of the Hartshorne coal in this tract is approximately 860 acres, while that of the McAlester coal is about 650 acres. An eastward extension of a branch of the Missouri, Kansas and Texas Railway since the coal lands were surveyed covers an additional area of about 12 acres.

TRACT NO. 38.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4.....	1	5	17	161.60
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	5	17	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	1	5	17	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	1	5	17	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	5	17	40
E. $\frac{1}{2}$	36	6	17	320
SW. $\frac{1}{4}$	36	6	17	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	36	6	17	80
Total area.....				921.60
Occupied by railroad.....				9.81

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tracts 36 and 37. The area of the Hartshorne coal is approximately 860 acres, while that of the McAlester coal is about 700 acres. An eastward extension of the Missouri, Kansas and Texas Railway across this tract since the coal lands were surveyed covers an additional area of approximately 10 acres.

TRACT NO. 39.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of McAlester town site.</i>				
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	6	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6	14	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	6	14	80
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	6	14	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	6	14	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	6	14	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	6	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	14	40
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	6	14	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	6	14	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	14	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	6	14	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	35	6	14	80
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	5
N. $\frac{1}{2}$ of lot 3	30	6	15	20.46
Total				865.46

TRACT NO. 39—Continued.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands within McAlester town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	20
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	10
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	5
S. $\frac{1}{2}$ of lot 3	30	6	15	20.46
Total				55.46
Total area of tract				920.92
Occupied by cemetery				5
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
Occupied by city water main				1.44

This tract contains both the Hartshorne and McAlester coals. The McAlester coal crops out in the north side from the middle of the east side of sec. 33, T. 6 N., R. 14 E., eastward to a point approximately 1,000 feet south of the center of sec. 30, T. 6 N., R. 15 E. Throughout its occurrence the McAlester coal dips steeply toward the north and can be mined successfully only by sloping.

The Hartshorne coal occurs only in the N. $\frac{1}{2}$ of the SE. $\frac{1}{4}$ of sec. 34 and the NW. $\frac{1}{4}$ of the SW. $\frac{1}{4}$ of sec. 35, T. 6 N., R. 14 E., where it dips 30° to 40° toward the south. About 240 acres of this tract contains no coal. The area of the McAlester coal in this tract is about 620 acres, while that of the Hartshorne is about 50 acres. The Hartshorne coal in this tract is represented by two workable beds of coal of nearly equal grade, 40 to 50 feet apart.

TRACT NO. 40.

	Sec- tion.	Town- ship north.	Range east.	Acres.
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	29	6	15	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	6	15	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	15	40
Total area				160

Only the McAlester coal is accessible in this tract. It crops out across the southwest side, dipping steeply toward the northeast. Approximately 20 acres of this tract contain no coal.

TRACT NO. 41.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	25	6	15	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	6	15	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	34	6	15	160
N. $\frac{1}{2}$	35	6	15	320
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	36	6	15	40
NW. $\frac{1}{4}$	36	6	15	160
Total area				920

Only the McAlester coal comes to the surface in tract 41. It crops out in an east-west direction across near the center of the N. $\frac{1}{2}$ of secs. 34, 35, 36, T. 6 N., R. 15 E. The dip of the coal is steeper toward the north, and it is believed that it can be mined successfully only by sloping. Approximately 260 acres of this tract contain no coal. It is possible that the Hartshorne coal may be accessible near the southern border of the tract at a depth of 600 to 800 feet.

TRACT NO. 42.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	6	15	80
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	6	16	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	16	40
SE. $\frac{1}{4}$	30	6	16	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	6	16	80
Lots 3 and 4	30	6	16	81.15
E. $\frac{1}{2}$	31	6	16	320
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	6	16	40
Lot 1	31	6	16	40.71
Total area				921.86

Only the McAlester coal is accessible in this tract. It crops out in the NE. $\frac{1}{4}$ of sec. 36, dipping toward the northeast at relatively low angles. It is estimated that the coal is at a depth of 700 feet at the southwest corner of the SE. $\frac{1}{4}$ of sec. 31. At this locality the dip of the coal is toward the east. In the northeast corner the coal is at a

depth of about 1,500 feet. In the SE. $\frac{1}{4}$ of the NE. $\frac{1}{4}$ of sec. 36, T. 6 N., R. 15 E., the Hartshorne coal is at a depth of 1,100 to 1,300 feet. The tract contains approximately 890 acres of McAlester coal.

TRACT NO. 43.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$	4	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	5	16	80
Lots 3 and 4	4	5	16	79.32
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	16	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	6	16	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$ and N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6	16	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	6	16	80
NW. $\frac{1}{4}$	32	6	16	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	6	16	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	6	16	40
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	6	16	40
Total area				959.32

Only the McAlester coal is accessible in this tract. It crops out in the extreme south side of section 4, dipping toward the north at about 20°. The dip of the coal decreases gradually toward the north until it reaches a depth of 1,500 to 1,700 feet in the northeastern part of the tract. Dips in the northwestern part of the tract are toward the northeast.

DESCRIPTION OF TRACTS, SOUTHERN MAP SHEET.

TRACT NO. 44.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	2	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	2	13	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	29	2	13	40
NE. $\frac{1}{4}$	30	2	13	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	2	13	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	2	13	80
Lots 3 and 4	30	2	13	69.32
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	2	13	80
Lot 2	30	2	13	34.54
Lot 1	31	2	13	34.90
Total area				658.76

This tract should contain both the Hartshorne and McAlester coals. The coal beds crop out in a northeast-southwest direction, dipping northwest 60° to 80° . The dips decrease slightly toward the northwest, but not sufficiently to warrant mining, except by slope, upon the crop of the coal. The depth of the McAlester coal beneath the surface in the northwest side of the tract is approximately 1,500 feet. The outcrops of the beds are separated by about one-fourth of a mile. The tract contains about 650 acres of Hartshorne coal and 350 acres of the McAlester coal.

TRACT NO. 45.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	2	13	40
SW. $\frac{1}{4}$	16	2	13	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	16	2	13	80
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	2	13	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	2	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	2	13	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	2	13	40
NE. $\frac{1}{4}$	20	2	13	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	2	13	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	2	13	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	2	13	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	2	13	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	2	13	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	2	13	40
Total area.....				960
Occupied by railroad				45.80

This tract should contain both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tract No. 44. The area of the former coal in this tract is 840 acres, and of the latter 560 acres.

TRACT NO. 46.

	Sec- tion.	Town- Ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	2	13	80
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	4	2	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	2	13	40
E. $\frac{1}{2}$	9	2	13	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	9	2	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	2	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	2	13	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	2	13	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	2	13	80
N. $\frac{1}{2}$ of N. $\frac{1}{4}$	16	2	13	160
Total area				960
Occupied by railroad				40.30

This tract should contain both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 44 and 45. The area of the Hartshorne coal is approximately 820 acres, while that of the McAlester is about 500 acres.

TRACT NO. 47.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 2	3	2	13	39.88
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	2	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	2	13	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	3	2	13	80
Lots 3 and 4	3	2	13	79.90
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	2	13	40
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	27	3	13	40
E. $\frac{1}{2}$	34	3	13	320
SW. $\frac{1}{4}$	34	3	13	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	3	13	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	3	13	40
Total area				959.78
Occupied by railroad				89.60

This tract should contain both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 44, 45, and 46. The area of the Hartshorne coal in the tract is approximately 900 acres, and that of the McAlester about 675 acres.

TRACT NO. 48.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	26	3	13	320
SW. $\frac{1}{4}$	26	3	13	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	3	13	40
NE. $\frac{1}{4}$	35	3	13	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	3	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	3	13	80
NW. $\frac{1}{4}$	35	3	13	160
Total area				960
Occupied by railroad				17.95

This tract contains both the Hartshorne and McAlester coals, the former dipping at from 60° to 80° at the outcrop, and the latter about 40° . The dips decrease toward the northwest, reaching finally about 30° at the northwest border, where the McAlester coal is 1,500 to 1,700 feet beneath the surface. The areas of these coals in the tract are approximately 920 and 660 acres, respectively.

TRACT NO. 49.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	23	3	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	3	13	40
SW. $\frac{1}{4}$	24	3	13	160
NE. $\frac{1}{4}$	25	3	13	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	3	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	3	13	40
W. $\frac{1}{2}$	25	3	13	320
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	3	13	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	30	3	14	40
Lot 1	30	3	14	39.46
Total area				959.46
Occupied by railroad				18.47

The Hartshorne and McAlester coals in this tract occur under practically the same conditions of structure as in tract 48. The area of the Hartshorne coal is about 830 acres, and that of the McAlester coal 530 acres.

TRACT NO. 50, PARCEL 1.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	13	3	13	40
SE. $\frac{1}{4}$	18	3	14	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	3	14	40
Lot 4	18	3	14	39.05
Area of parcel				279.05

Only the McAlester coal is accessible in this parcel, which is separated from the outcrop of the coal by leased lands. The coal near the outcrop here is about 3 feet 2 inches thick and of the usual good grade.

TRACT NO. 50, PARCEL 2.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	3	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	3	14	40
N. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	3	14	80
Area of parcel				160
Occupied by railroad				1.01

This parcel contains only the Hartshorne coal, which crops out across the southwest side, dipping toward the northwest 60° to 80° . It contains approximately 120 acres of coal.

TRACT NO. 50, PARCEL 3.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	3	14	80

Only the Hartshorne coal occurs in this parcel and under practically the same conditions of structure as in parcel 2. It has an area of available coal of about 40 acres.

Total area of tract No. 50 is 519.05 acres.

TRACT NO. 51.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	9	3	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	3	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	3	14	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	3	14	80
N. $\frac{1}{4}$	16	3	14	320
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	17	3	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	3	14	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	3	14	40
Total area.....				720
Occupied by railroad.....				3.39

Only the McAlester coal is easily accessible in this tract. It crops out across the southeast corner through a distance of about one-fourth of a mile, dipping toward the northwest at 25° to 30° . The dip gradually decreases to about 10° at the northwest side, where the coal is 1,500 to 1,700 feet beneath the surface. The tract contains about 690 acres of coal. The Hartshorne coal is at a depth of 800 to 1,000 feet in the southeast corner of the tract.

TRACT NO. 52.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	3	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	10	3	14	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	3	14	80
NE. $\frac{1}{4}$	15	3	14	160
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	15	3	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	15	3	14	80
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	15	3	14	160
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	3	14	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	3	14	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	21	3	14	80
Total area.....				840
Occupied by railroad.....				10.19

Tract 52 contains the Hartshorne and McAlester coals. The former crops across the southeast side dipping toward the northwest at 40° to 80° . The dips decrease toward the northwest side, finally reaching about 10° in the north side. The McAlester coal crops out across the center of the tract dipping toward the northwest 25° to 30° . It

decreases in slope toward the northwest at the same rate as the Hartshorne coal below.

TRACT NO. 53.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	3	14	40
NE. $\frac{1}{4}$	11	3	14	160
S. $\frac{1}{2}$	11	3	14	320
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	3	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	3	14	40
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	14	3	14	160
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	3	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	14	3	14	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	14	3	14	80
Total area.....				960
Occupied by railroad.....				13.60

This tract contains both the Hartshorne and McAlester coals, the outcrops of which are separated by about one-third of a mile. The dip of the Hartshorne coal at the outcrop is about 40° , while that of the McAlester is about 30° . The dips decrease toward the northwest, reaching about 10° at the limit of the tract, where the McAlester coal is 1,500 to 1,700 feet beneath the surface. The areas of the two coals are approximately 900 and 600 acres, respectively.

TRACT NO. 54.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$	1	3	14	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	3	14	80
N. $\frac{1}{2}$	12	3	14	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	12	3	14	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	3	14	40
Lots 5, 6, and 7.....	6	3	15	108.02
Lots 1 and 2.....	7	3	15	73.10
Total area.....				941.12
Occupied by railroad.....				25.19

The occurrence and conditions of structure of the Hartshorne and McAlester coals in this tract are practically the same as are found in tract 52. The areas of coal for the two beds are approximately 900 and 720 acres, respectively.

TRACT NO. 55.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 4	5	3	15	40.43
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	3	15	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	3	15	80
Lots 1 and 2	6	3	15	80.49
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	3	15	80
SE. $\frac{1}{4}$	6	3	15	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	3	15	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	3	15	40
Lot 3	6	3	15	40.12
NE. $\frac{1}{4}$	7	3	15	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	3	15	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	3	15	40
Total area				921.04
Occupied by railroad				15.46

Tract No. 55 contains both the Hartshorne and McAlester coals, and their outcrops are separated by about half a mile, the former being along the extreme southern border of the tract. Both coals dip toward the northwest at 30° to 40° . The McAlester coal reaches a depth of 1,500 to 1,700 feet in the northwest corner of the tract. The Hartshorne coal in this tract and elsewhere in the district can be found about 1,300 feet beneath the McAlester. The area of the Hartshorne coal is approximately 880 acres, while the McAlester coal is about 520 acres.

TRACT NO. 56.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	4	3	15	40
Lots 2, 3, and 4	4	3	15	123.07
Lots 1, 2, and 3	5	3	15	122.37
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	3	15	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	3	15	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	3	15	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	3	15	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	4	15	40
SE. $\frac{1}{4}$	32	4	15	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	4	15	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	4	15	80
Total area				925.44
Occupied by railroad				25.08

Tract No. 56 contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tract 55. Their areas in the tract are approximately 850 acres and 380 acres, respectively.

TRACT NO. 57.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$	27	4	15	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	4	15	40
E. $\frac{1}{2}$	33	4	15	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	33	4	15	160
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	33	4	15	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	4	15	80
NW. $\frac{1}{4}$	34	4	15	160
Total area.....				960
Occupied by railroad.....				18. 81

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 55 and 56. Their areas in this tract are approximately 930 acres and 490 acres, respectively.

TRACT NO. 58.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	23	4	15	40
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	4	15	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	4	15	40
W. $\frac{1}{2}$	26	4	15	320
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	27	4	15	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	27	4	15	80
SE. $\frac{1}{4}$	27	4	15	160
NE. $\frac{1}{4}$	34	4	15	160
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	4	15	40
Total area.....				960
Occupied by railroad.....				18. 04

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 55, 56, and 57. Their areas in this tract are about 900 and 460 acres, respectively.

TRACT NO. 59.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	13	4	15	40
SE. $\frac{1}{4}$	23	4	15	160
E. $\frac{1}{2}$	24	4	15	320
SW. $\frac{1}{4}$	24	4	15	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	24	4	15	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	4	15	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	4	15	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	4	15	80
Total area.....				960
Occupied by railroad.....				17.65

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tracts 56, 57, and 58, except in the SE. $\frac{1}{4}$ of sec. 24, where a local basin occurs. In the south side of the quarter section the Hartshorne coal dips toward the northwest about 35° . Near the center of the quarter section it rises toward the surface and again descends toward the northwest. The Hartshorne coal which outcrops very near and parallel to the railroad, dips toward the northwest 30° to 40° . The dips decrease slightly toward the northwest until the coal reaches a depth of 1,500 to 1,700 feet at the border of the tract. The area of the Hartshorne coal is approximately 920 acres, while that of the McAlester coal is about 660 acres.

TRACT NO. 60.

	Sec- tion.	Town- ship- north.	Range east.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	3	13	80
SW. $\frac{1}{4}$	9	3	13	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	3	13	80
W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	3	13	80
NW. $\frac{1}{4}$	16	3	13	160
E. $\frac{1}{2}$	17	3	13	320
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	3	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	3	13	40
Total area.....				960

Tract No. 60 lies across an upward fold in the rocks. It is considered that the tract contains the McAlester coal, which outcrops in the form of a curve in the northeastern part of the tract. The coal dips toward the northwest on the northwest side, toward the southwest on the southwest side, and toward the south in the south side. The dips are relatively steep in the northwestern and southern parts of the tract, while in the central southwestern parts they are much lower. The tract contains an estimated area of 880 acres of the McAlester coal. The Hartshorne coal lies beneath the tract but is beyond the depth of practical mining.

TRACT NO. 61.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	3	13	40
E. $\frac{1}{2}$	9	3	13	320
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	3	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	3	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	3	13	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	3	13	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	3	13	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	3	13	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	3	13	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	3	13	40
NE. $\frac{1}{4}$	16	3	13	160
Total area.....				960

It is considered that both the Hartshorne and McAlester coals occur in this tract. The McAlester coal crops out in a northeast-southwest direction across the center of the NE. $\frac{1}{4}$ of sec. 9, dipping toward the northwest. The same coal occurs upon the southeast side of the upward fold cropping out in a northeast-southwest direction very near the southwest corner of section 10, dipping toward the south. The Hartshorne coal, it is believed, occurs near the center of section 10, pitching toward the southwest at about 10° . It has been prospected in the SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of this section. The thickness and quality of the coal could not be determined at the time examinations were made. The area of the Hartshorne coal is approximately 930 acres, while that of the McAlester is about 520 acres.

TRACT NO. 62.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 2	2	3	13	39.03
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	3	13	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	3	13	80
Lots 3 and 4	2	3	13	78.60
Lot 1	3	3	13	39.41
S. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	3	13	80
N. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	3	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	3	13	40
SW. $\frac{1}{4}$	3	3	13	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	3	13	40
N. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	3	13	80
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	4	13	80
E. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	4	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	4	13	40
Total area				957.04

It is estimated that this tract contains both the Hartshorne and McAlester coals, cropping out in a northeast-southwest direction. The outcrop of the former is very near the southeast side, while that of the latter is nearly across the center of the tract. The dips are toward the northwest at 25° to 50° . The areas of the two coals in the tract are approximately 900 acres and 630 acres, respectively.

TRACT NO. 63.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	3	13	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	3	13	80
SE. $\frac{1}{4}$	10	3	13	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	3	13	40
N. $\frac{1}{2}$	11	3	13	320
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	3	13	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	11	3	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	11	3	13	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	15	3	13	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	3	13	40
Total area				880

It is believed that tract 63 contains both the Hartshorne and McAlester coals, dipping toward the southeast. The outcrop of the Harts-

horne coal is along the northwest side, while that of the McAlester is about one-quarter of a mile distant toward the southeast. The areas of the two coals in the tract are about 820 acres and 620 acres, respectively.

TRACT NO. 64.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 1	2	3	13	38.85
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	4	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	4	13	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	4	13	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	4	13	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	4	13	80
N. $\frac{1}{2}$	36	4	13	320
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	4	13	40
W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	4	13	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	4	14	80
Lots 3 and 4	30	4	14	75.22
Lot 1	31	4	14	37.53
Total area				951.60
Occupied by railroad				26.88

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tract 62. Their areas in this tract are about 800 acres and 375 acres, respectively.

TRACT NO. 65.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 1	1	3	13	39.85
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	3	13	80
S. $\frac{1}{2}$	1	3	13	320
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	3	13	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	2	3	13	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	3	13	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	3	13	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	12	3	13	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	3	14	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	3	14	40
Lots 4, 5, 6, and 7	6	3	14	152.20
Total area				952.05
Occupied by railroad				31.14

Tract 65 contains both the Hartshorne and McAlester coals, the former at its outcrop dipping 70° to 80° and the latter about 30° toward the southeast. Their areas in the tract are approximately 900 acres and 550 acres, respectively. The dips decrease toward the southeast, reaching about 20° at the southeastern border, where the McAlester coal is estimated to be 1,500 to 1,700 feet beneath the surface. The Hartshorne coal has been prospected in the NE. $\frac{1}{4}$ of sec. 1.

TRACT NO. 66.

	Section.	Township north.	Range east.	Acres.
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	4	14	40
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	4	14	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	4	14	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	4	14	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	4	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	4	14	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	20	4	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	20	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	4	14	80
NW. $\frac{1}{4}$	20	4	14	160
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	4	14	40
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	4	14	80
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	4	14	80
Lot 2.....	30	4	14	37.74
Total area.....				957.74
Occupied by railroad.....				54.22

Tract 66 contains both the Hartshorne and McAlester coals, which dip toward the northwest 40° to 60° . The area of McAlester coal in the tract was originally about 830 acres. Mines located on it very near the southeast end of the tract and operated a few years, beginning about 1897, removed a small area of coal. The Hartshorne coal has not been mined.

TRACT NO. 67.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, and 3	6	3	14	120
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	6	3	14	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	4	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	4	14	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	4	14	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	4	14	80
SE. $\frac{1}{4}$	31	4	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	31	4	14	80
Lot 4	31	4	14	37.59
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	4	14	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	4	14	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	4	14	40
Total area				957.59

This tract contains both the Hartshorne and McAlester coals which dip toward the southeast at their outcrops from 40° to 70° . The dips decrease toward the southeast, reaching about 20° to 30° at the border of the tract. The outcrops of the two coals are separated by about one-fourth of a mile, that of the Hartshorne being near the northwest border. The area of the Hartshorne coal is estimated to be 830 acres and that of the McAlester about 460 acres.

TRACT NO. 68.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	21	4	14	320
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	21	4	14	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	22	4	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	22	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	22	4	14	80
NW. $\frac{1}{4}$	22	4	14	160
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	4	14	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	4	14	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	28	4	14	40
Total area				880

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tract 67. The coal beds dip toward the southeast and have areas of approximately 820 acres and 720 acres, respectively.

TRACT NO. 69.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	14	4	14	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	14	4	14	80
S. $\frac{1}{4}$	15	4	14	320
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	4	14	80
NE. $\frac{1}{4}$	16	4	14	160
N. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	4	14	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	4	14	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	16	4	14	40
Total area.....				960

Tract 69 lies across an upward fold in the rocks which pitches toward the northeast. The tract contains both the Hartshorne and McAlester coals. The McAlester coal crops out in a northeast-southwest direction across and near the middle of the SW. $\frac{1}{4}$ of sec. 15, dipping toward the southeast, and attains a depth of approximately 1,200 feet at the extreme eastern border of the tract. From the line of outcrop, above named, toward the northwest the McAlester coal does not occur in this tract. It is estimated that the Hartshorne coal outcrops in the curve conforming nearly to the boundary of the tract in the south side of section 16. The dips are toward the northwest, northeast, and east around this curve. The area of the Hartshorne coal is approximately 945 acres, and that of the McAlester about 340 acres. Considerable mining by stripping has been done on the McAlester coal, but no record of the tonnage removed is now available.

TRACT NO. 70.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Savanna town site.</i>				
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	4	14	40
E. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	16	4	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	4	14	40
Total				220
<i>Lands within Savanna town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
Total				100
Total area of tract				320
Occupied by railroad.....				14. 23

Only the McAlester coal is available in this tract. The coal crops out across the extreme southeast corner, dipping toward the northwest at about 30° . The coal reaches a depth of about 1,500 feet in the northwest corner of the tract. Some of the coal of this tract has been removed by mines located near the southeast corner, but no record of the tonnage is now available.

TRACT NO. 71.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	4	14	40
SE. $\frac{1}{4}$	11	4	14	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	11	4	14	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	11	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	12	4	14	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	14	4	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	4	14	40
NW. $\frac{1}{4}$	14	4	14	160
NE. $\frac{1}{4}$	15	4	14	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	4	14	80
Total area				960

Only the McAlester coal is available in this tract. It crops out in the extreme east end dipping toward the northeast and east. In the northeastern part the dips are toward the southeast about 15° and less, while in the southwestern part they are toward the northeast. The tract contains approximately 920 acres of coal.

TRACT NO. 72.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	4	14	80
S. $\frac{1}{2}$ of S. $\frac{1}{4}$	2	4	14	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	4	14	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	4	14	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	4	14	40
N. $\frac{1}{2}$	11	4	14	320
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	11	4	14	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	4	14	40
NW. $\frac{1}{4}$	12	4	14	160
Total area				960

Only the McAlester coal is available in tract 72, and occurs at a depth of nearly 500 feet in the southeast corner, dipping toward the northeast at about 15° . In the eastern part the dips become southeasterly, and decrease to 5° and less where the coal reaches a depth of approximately 1,200 feet.

TRACT NO. 73.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4.....	2	4	14	127.87
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	4	14	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	4	14	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	4	14	80
Lots 1, 2, 3, and 4.....	3	4	14	170
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	*3	4	14	160
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	3	4	14	160
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	4	14	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	4	14	40
Total area.....				937.87
Occupied by railroad.....				22.31

Only the McAlester coal is accessible in this tract. It lies in the northwest side of an upward fold. The coal is practically flat at the east end, but toward the west the dips increase to approximately 15° . At the east end the coal is estimated to be at a depth of 800 to 1,000 feet beneath the surface.

TRACT NO. 74.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4.....	1	4	14	169.48
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	4	14	160
SE. $\frac{1}{4}$	1	4	14	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	4	14	80
Lot 1.....	2	4	14	42.65
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	4	14	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	4	14	40
Lots 2, 3, 4, 5, and 6.....	6	4	15	189.20
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	4	15	40
Total area.....				921.33

This tract lies on the southeast side of an upward fold and the coal is in a nearly flat position in the western part at an estimated depth of 800 to 1,000 feet. Toward the southeast the dips increase to probably 10° , where the coal attains a depth of approximately 1,200 feet. The Hartshorne coal is at too great a depth to be profitably mined in this tract at the present time.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., June 9, 1904.

Circular No. 1 of the coal and asphalt lands in the McAlester district (No. 1) is respectfully returned to the Secretary of the Interior, with recommendation that it be approved.

A. C. TONNER,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., June 20, 1904.

Approved.

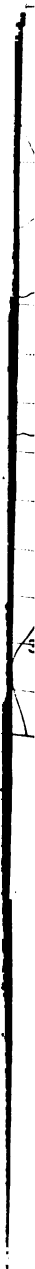
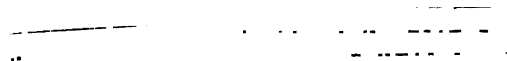
E. A. HITCHCOCK,
Secretary

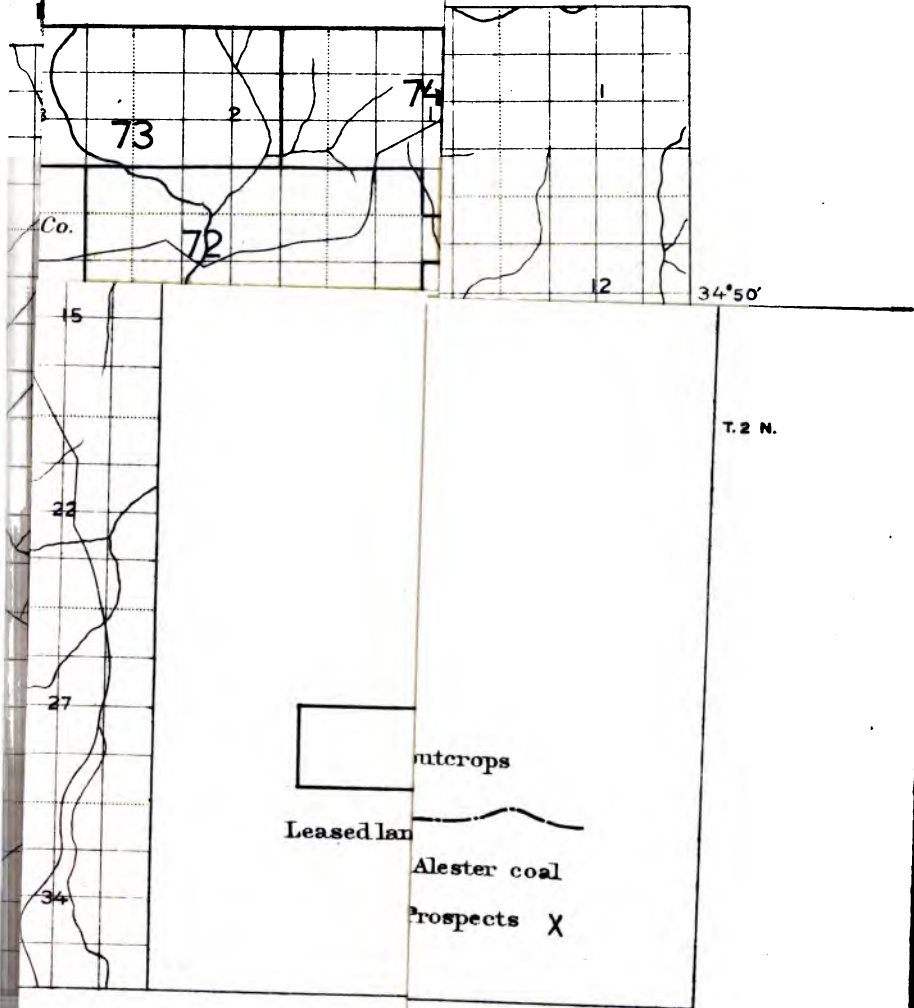
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DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 2.

MAPS OF SEGREGATED COAL LANDS

IN THE

WILBURTON-STIGLER DISTRICT, CHOCTAW NATION,
INDIAN TERRITORY,

WITH

DESCRIPTIONS OF THE UNLEASED SEGREGATED COAL LANDS.

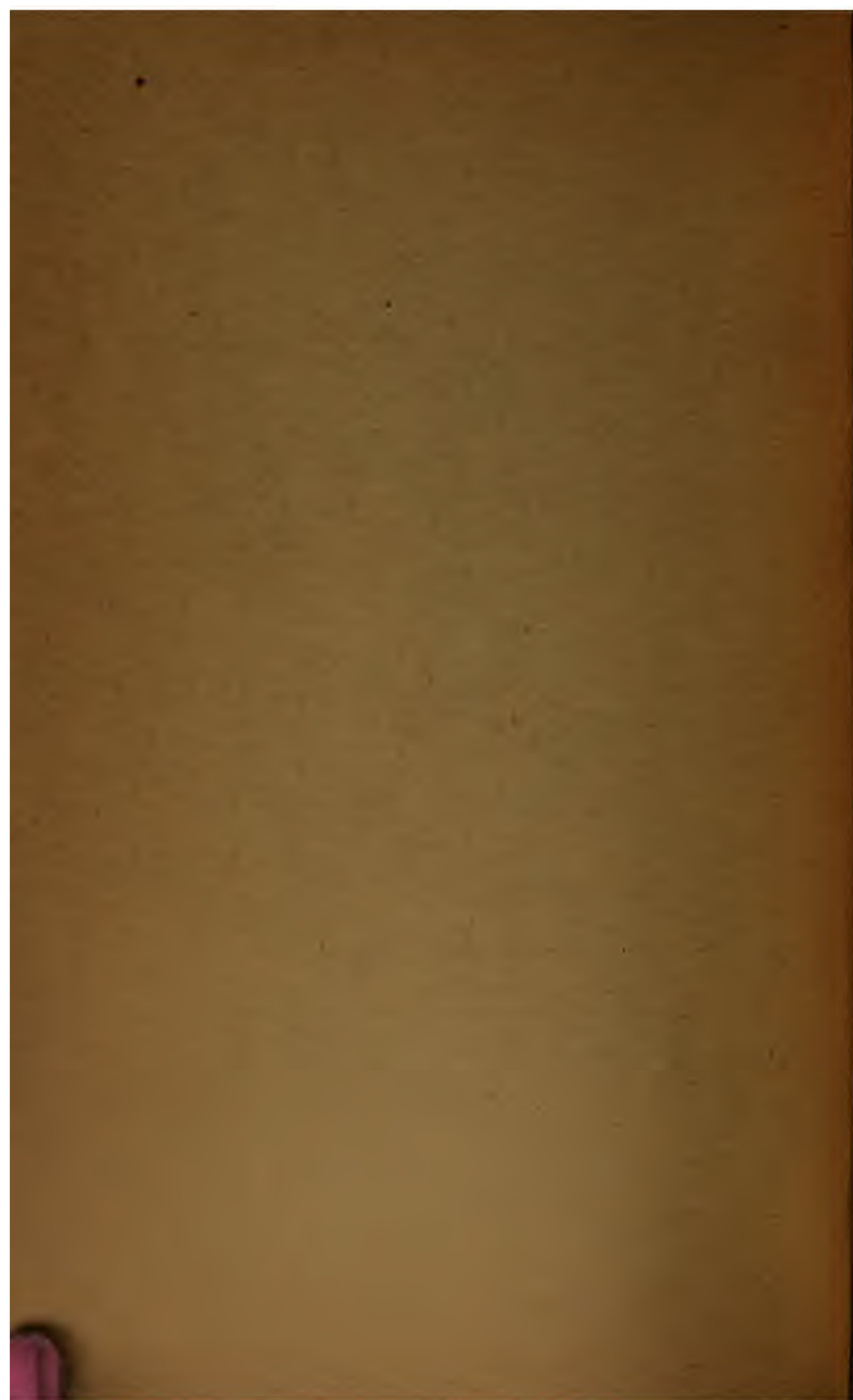
BY

JOSEPH A. TAFF.

*Bids for the purchase of tracts within this district (No. 2)
will be opened by the Commissioner of Indian Affairs, at
his office in Washington, at 2 o'clock p. m. (eastern time),
on Monday, December 5, 1904.*

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1904.



U. S. DEPARTMENT OF THE INTERIOR.

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1904.

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., June 6, 1904.

SIR: I have the honor to transmit herewith descriptive texts on the unleased segregated lands in the Wilburton-Stigler district, Choctaw Nation, Indian Territory, prepared by Mr. Joseph A. Taff in accordance with instructions contained in your letter of May 16, 1904. It is proposed that this report be published as Circular No. 2, for the information of those submitting bids in the second sale of unleased segregated coal lands.

Very respectfully,

CHAS. D. WALCOTT,
Director.

HON. E. A. HITCHCOCK,
Secretary of the Interior.

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ILLUSTRATIONS.

Map of Wilburton division showing segregated coal lands and coal outcrops..	At end
Map of Stigler division showing segregated coal lands and coal outcrops.....	At end

DESCRIPTION OF THE UNLEASED SEGREGATED COAL LANDS IN THE WILBURTON-STIGLER DISTRICT, CHOCTAW NATION, INDIAN TERRITORY.

INTRODUCTORY REMARKS.

The Wilburton district contains both the Hartshorne and McAlester coal beds. The McAlester coal in the Wilburton division is essentially the same in quality as the coal in that of the Stigler. Both coal beds occur in the same geologic position in the rocks, and almost without doubt the Stigler coal is the equivalent of one of those classed as McAlester coal in the Wilburton division. Because of these relations, and for convenience of sale, the unleased segregated coal lands of the Wilburton and Stigler divisions are grouped together and numbered consecutively, beginning with the southern or Wilburton sheet. The unleased segregated coal lands designated for sale are divided into tracts as nearly as may be but not exceeding 960 acres, as provided by law, and are colored blue on the map. Lands under lease are not to be sold until further action by Congress. Each lease is bounded by heavy black lines and the leaseholder's name with the number is placed on each.

In the season of 1899 the United States Geological Survey mapped the geology of the eastern part of the Choctaw coal fields and studied the occurrence of the coal. In 1900 a report, briefly outlining the geology and setting forth the economic features of the coal, was published in Part II of the twenty-first Annual Report of the Survey. In this work the entire area described was carefully surveyed, the outcrops of the principal coal beds and other formations were located, and their structure and positions beneath the surface were determined with approximate exactness.

In the surveys in connection with the segregation of the coal lands the coal outcrops were retraversed and examined, aided by later mining developments. In this work complete surveys were made of the Stigler division, determining the quality and structure of its coal.

Revision of previous locations and the extensions or the projection of new lines of railroad is, according to law, under the jurisdiction of the United States courts of Indian Territory. Any changes of exist-

ing lines or the building of new railroads on the segregated coal lands since March, 1903, have no authentic record in the Department of the Interior further than maps showing the plan of the proposed changes or projections.

CONDITIONS GOVERNING THE CLASSIFICATION OF COAL BEDS.

In the selection of these lands for segregation and sale the following criteria were considered of essential importance:

1. The coal should be of a quality and hardness to create a demand for its use for commercial purposes.
2. It should be thick enough to be worked successfully.
3. Its structure or position and depth in the earth should assure profitable mining.

In the description of each tract only those coal beds are considered to which the above qualifications can be applied.

In some coal regions it is found that certain coal beds are variable in thickness or quality, or that both the thickness and quality are matters of uncertainty within short distance. It has been found that all beds of coal as well as other rocks are variable in thickness and composition within wide range.

The rocks in the Wilburton division of the district are folded in such a manner that the coal beds come to the surface or crop out in long stretches, and the thickness and quality of the beds have been proved by extensive prospecting or by mining throughout most of the surface occurrence. The folding of the strata also causes the coal to extend to depths reaching the limit of practical mining within a few miles at farthest from the outcrops of the beds. It is reliably certain that if particular beds of coal vary but slightly both in quality and thickness in various directions along outcrops throughout the district, as is the case with the Hartshorne and McAlester beds, the same will be equally permanent within a few miles from the outcrop.

In the case of the Upper Hartshorne bed it appears that there is simply a variation in thickness without material change in composition. Since it is known to be locally variable not only in this district but in the McAlester and Howe districts as well, it is neither correct nor profitable to assume that it is present in workable thickness far from the land where its conditions are known.

Locally variable thin beds of coal have been shown by drill records and by surface prospecting to occur in the district at various positions in the rocks above the Hartshorne coal. The coal in these beds can not be profitably worked at present and will not be in demand until a time when the thicker beds are exhausted. This time is so indefinitely distant in the future that their presence is not considered to add any value to the lands.

DESCRIPTION OF COAL BEDS IN THE WILBURTON DIVISION OF THE DISTRICT.

HARTSHORNE COAL BEDS.

There are four workable coal beds in the Wilburton division of the district. The lowest is considered to be the same bed as that worked at Hartshorne and other places in the McAlester district, and known locally as the Hartshorne coal. The second occurs about 50 feet above the first and because of its near association may be known as the upper Hartshorne coal. In the vicinity of Wilburton, and also at Hughes, where the Turkey Creek Coal Company is operating, both of these beds are known to be of workable thickness. At Wilburton the lower Hartshorne coal is 5 feet, while the upper is 4 feet 6 inches thick. South of Hughes on the Turkey Creek Coal Company's lease, the lower coal is 4 feet 2 inches in thickness, while the upper is 4 feet. Farther toward the east, in the vicinity of Howe, only the lower coal has been worked where it is 4 feet in thickness. The upper coal is present, but is thinner than the lower bed and has not been mined in competition with it.

The composition of the Hartshorne coal changes gradually eastward, as may be seen by the accompanying record of proximate analyses. These analyses show that the lower coal at Howe contains about 7 per cent less of volatile matter than at Wilburton with a relative increase of fixed carbon. The percentage of ash is also less. The Hartshorne coal throughout this region will produce about 50 per cent of coke of good grade, as attested by the product of coking plants located at Wilburton and at Howe.

Proximate analyses of Hartshorne coals.

Name of coal and place.	Moisture.	Volatile combustible matter.	Fixed carbon.	Ash.	Sulphur.	Phosphorus
Upper Hartshorne coal, Wilburton	1.43	38.15	50.76	9.66	0.088	0.052
Lower Hartshorne coal, Wilburton	1.49	37.83	53.06	7.62	1.01	.023
Lower Hartshorne coal, southwest of Howe.	.45	20.89	68.86	9.80	.69	.063

The roof of the lower coal is composed of a hard slaty shale which locally gives place to a sandstone. The roof of the upper coal is of slaty shale, while the floor of both is usually a compact clay.

MCALESTER COAL BEDS.

The two upper beds of coal in this district occur in the horizon of the McAlester coal and are classed provisionally with it. These coals have been exploited to a limited extent at Panola, a few miles east of Wilburton, at Redoak, near Hughes, and at Fanshawe. They are

separated by about 60 feet of shale and a rather hard slaty shale forms the roof of each, the floors being composed of compact clay. These coal beds vary somewhat in thickness, decreasing generally toward the east. At Panola one of the beds is reported to be 4 feet 2 inches thick. At Redoak they range from 30 to 36 inches, and at Turkey Creek one of the beds is 34 inches in thickness. At Fanshawe they are 20 to 26 inches in thickness.

The coal from these two beds has the physical characteristics of the McAlester coal in the McAlester district and is presumed to be of equal grade. The accompanying analysis of the McAlester coal from Krebs, Ind. T., will attest its quality:

Proximate analysis of McAlester coal.

Moisture.....	1.74
Volatile combustible matter.....	37.00
Fixed carbon	56.86
Ash	4.40
Sulphur	.65
Phosphorus.....	.014

DESCRIPTION OF COAL BED IN THE STIGLER DIVISION.

STIGLER COAL.

The Stigler division is known to contain but a single coal bed of any considerable value. This coal occupies approximately the same position geologically as the McAlester coal. Whether it is the exact equivalent of the McAlester bed, however, can not now be determined. The coal of the Stigler division of the district, to be known as the Stigler coal, is thinner than the McAlester bed in the vicinity of McAlester, being a little less than 2½ feet. Its quality, however, is higher, as indicated by the following analysis of the coal from a mine 2 miles west of Stigler. This mine near Stigler is shallow and the quality of the coal, as shown by the analysis, is not as good as will be found under thicker cover.

Proximate analysis of the Stigler coal.

Moisture.....	1.06
Volatile combustible matter.....	23.01
Fixed carbon	72.47
Ash	1.92
Sulphur	.91
Phosphorus	Not determined.

The action of the coal in the analysis indicates that it will most probably coke successfully. Should this be found true, the coke would be of the best quality, since both the percentage of ash and sulphur are very low.

The Stigler coal crops out very near the borders of the Stigler division, except in that part near the Canadian River between sec. 23, T. 10 N., R. 20 E., and sec. 17, T. 9 N., R. 20 E. The dip of the coal in all cases at the outcrop is toward the axial part of the basin, which extends in a northeast-southwest direction near the center of the district. In the northeast end of the district the basin turns upward, and in the same part the coal pitches toward the southwest at probably 10° . In the southwest end, however, the dip is very low toward the northwest, the axial part of the basin extending southwestward across the Canadian River.

The outcrop of the coal, especially in the southeast side of the district, could not be located with close precision on account of the low inclination of the bed and smooth surface of the land. The approximate location of the outcrop upon the map, however, is believed to be safely on the side of the coal.

The Stigler coal is most admirably situated for successful mining by any method that may be used. It lies in a shallow basin, and is inclined at angles between 2° and 10° at the outcrop on all sides. A large area in the central part of the basin contains the coal lying nearly flat, and at no place beyond the depth of easy access.

DESCRIPTION OF TRACTS, WILBURTON DIVISION.

TRACT NO. 1.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 3, 4, and 5.....	6	5	18	113.42
E. $\frac{1}{4}$	31	6	18	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	6	18	160
Lots 1, 2, 3, and 4	31	6	18	145.76
Total area.....				739.18
Occupied by railroad.....				11.86

Tract No. 1 contains both the Hartshorne and McAlester coals, which are separated in their outcrop by about one-third of a mile. The Hartshorne coal dips toward the northwest at about 40° to 45° , while the dip of the McAlester is about 30° . Both coals change gradually in dip toward the northwest, reaching about 15° at the limit of the tract. The area of the Hartshorne is approximately 660 acres, and that of the McAlester is about 460 acres. The recent projection of a branch of the Missouri, Kansas and Texas Railroad across tract 1 will add about 11 acres to its railroad land.

TRACT NO. 2.

	Sec- tion.	Town- ship north.	Range east.	Acres.
N. $\frac{1}{2}$	32	6	18	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	32	6	18	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	6	18	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	6	18	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	6	18	80
NW. $\frac{1}{4}$	33	6	18	160
Total area.....				840

Both the Hartshorne and McAlester coals are found in this tract dipping toward the north 70° to 80° . The dip changes but slightly throughout the northern part of the tract. Both coals can be mined successfully only by sloping. The area of the Hartshorne coal in this tract is about 730 acres, and that of the McAlester nearly 410 acres. The recent projection of a branch of the Missouri, Kansas and Texas Railroad across this tract includes about 21 acres in its right of way.

TRACT NO. 3.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	27	6	18	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	6	18	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	6	18	80
N. $\frac{1}{2}$	34	6	18	320
Total area.....				600
Occupied by railroad.....				13.92

Tract No. 3 contains both the Hartshorne and McAlester coals, occurring under practically the same conditions of structure as in tract 2. The area of the two coals in this tract are approximately 560 and 280 acres, respectively. The recent projection of a branch of the Missouri, Kansas and Texas Railroad across this tract includes about 15 acres in its right of way.

1900

TRACT NO. 4.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	6	18	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6	18	40
NE. $\frac{1}{4}$	36	6	18	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	36	6	18	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	6	19	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	6	19	80
SE. $\frac{1}{4}$	30	6	19	160
Lots 3 and 4.....	30	6	19	75.58
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	6	19	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	31	6	19	80
Lots 1 and 2.....	31	6	19	75.35
Total area.....				950.93

This tract contains both the Hartshorne and McAlester coals dipping toward the north-northeast at 15° to 40° . Leased lands separate the tract from the outcrop of the Hartshorne coal. It is estimated that this coal bed is approximately 400 feet beneath the southwest corner of the tract. The McAlester coal crops out across near the center of the tract in an east-west direction. Its area is approximately 590 acres.

TRACT NO. 5.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	6	19	40
SE. $\frac{1}{4}$	29	6	19	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	6	19	80
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	31	6	19	160
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	6	19	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	6	19	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	6	19	40
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	6	19	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	19	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	6	19	80
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	32	6	19	160
Total area.....				960

The Hartshorne coal underlies the entire tract, being at a depth of about 1,000 feet in the southwest corner. It dips toward the north-

northeast 10° to 25° . Apparently the dip increases toward the northeast. The McAlester coal crops out across the tract, dipping in the same direction as the Hartshorne coal—about 15° . This coal has an area of about 640 acres.

TRACT NO. 6.

	Section.	Township north.	Range east.	Acres.
Lots 3 and 4.....	4	5	19	80.95
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	4	5	19	40
Lots 1, 2, and 3.....	5	5	19	120.74
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	5	19	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	5	19	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	6	19	40
SE. $\frac{1}{4}$	32	6	19	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	19	40
W. $\frac{1}{2}$	33	6	19	320
Total area.....				921.69

Tract 6 contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tract 5, except that the latter outcrops in a northwest-southeast direction. The area of the McAlester coal is about 570 acres.

TRACT NO. 7.

	Section.	Township north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	5	19	40
Lot 4.....	1	5	19	40.95
Lots 1, 2, 3, and 4.....	2	5	19	166.16
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	6	19	80
SE. $\frac{1}{4}$	33	6	19	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	6	19	80
SW. $\frac{1}{4}$	34	6	19	160
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	35	6	19	160
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	6	19	40
Total area.....				927.11

Tract 7 contains both the Hartshorne and McAlester coals. The former is at a depth of 1,700 to 1,800 feet and the latter about 480 feet beneath the southeast corner of the tract. The dips of the beds vary between 15° and 20° and are toward the northeast in the western part and toward the north in the eastern part of the tract.

TRACT NO. 8.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, and 3.....	1	5	19	121.21
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	5	19	80
N. $\frac{1}{2}$ of S. $\frac{1}{4}$	1	5	19	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	5	19	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	6	5	20	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	5	20	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	5	20	40
Lots 3, 4, 5, and 6.....	6	5	20	157.24
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	36	6	19	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	6	19	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	31	6	20	80
Lot 4.....	31	6	20	38.60
Total area.....				917.05

Tract 8 contains both the Hartshorne and McAlester coals. The latter crops out in an east-west direction very near the southern border, dipping toward the north about 20°. The Hartshorne coal is at a depth of 1,200 to 1,400 feet beneath the southern border of the tract. It dips northward parallel with the McAlester coal.

TRACT NO. 9.

	Sec- iron.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4.....	5	5	20	122.21
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	5	20	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	5	5	20	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	5	20	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	5	20	80
Lots 1 and 2.....	6	5	20	81.49
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	5	20	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	6	5	20	40
SE. $\frac{1}{4}$	31	6	20	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	32	6	20	40
SW. $\frac{1}{4}$	32	6	20	160
Total area.....				923.70
Occupied by railroad.....				.05

Only the McAlester coal crops out in tract 9. The Hartshorne coal has a depth of about 1,000 to 1,200 feet at the southern border of the

tract. The dip of the McAlester coal is northward about 30° . The dip gradually becomes less toward the north until it reaches about 12° in the north side of the tract. The area of the McAlester coal in this tract is about 820 acres.

TRACT NO. 10.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	5	20	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	5	5	20	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	6	5	20	80
NE. $\frac{1}{4}$	7	5	20	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	7	5	20	80
N. $\frac{1}{2}$	8	5	20	320
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	8	5	20	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	5	20	80
Total area				960
Occupied by railroad				15.72

Tract 10 contains only the Hartshorne coal, which crops in an east-west direction very near the southern border, dipping northward at about 35° to 40° . The dip becomes gradually less toward the north. The area of the coal in this tract is approximately 890 acres.

TRACT NO. 11.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4	4	5	20	121.35
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	5	20	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	5	20	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	5	20	80
Lot 1	5	5	20	40.39
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	5	20	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	5	5	20	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	6	20	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6	20	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	32	6	20	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	33	6	20	80
SW. $\frac{1}{4}$	33	6	20	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	6	20	80
Total area				921.74
Occupied by railroad				10.05

This tract contains both the Hartshorne and McAlester coals, the former being at a depth of 800 to 1,000 feet beneath the southern border. Both coals dip toward the north about 20° on the south side, decreasing to about 10° on the north side. The McAlester bed crops out across and near the south end of the tract. The area of the McAlester coal is approximately 820 acres

TRACT NO. 12.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	3	5	20	80
SW. $\frac{1}{4}$	3	5	20	160
SE. $\frac{1}{4}$	4	5	20	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	5	20	80
NE. $\frac{1}{4}$	9	5	20	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	5	20	80
W. $\frac{1}{2}$ NE. $\frac{1}{4}$	10	5	20	80
NW. $\frac{1}{4}$	10	5	20	160
Total area				960
Occupied by railroad				2. 86

Tract 12 contains only the Hartshorne coal, which occurs under practically the same condition of structure as found in tract 10, except that the dips probably are a little lower. The tract contains approximately 900 acres of coal.

TRACT No. 13.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4	3	5	20	122. 66
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	20	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	3	5	20	80
Lot 1	4	5	20	40. 65
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	5	20	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	6	20	80
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	33	6	20	80
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	34	6	20	160
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	34	6	20	160
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	6	20	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	20	40
Total area				923. 31
Occupied by railroad				12. 83

This tract contains both the Hartshorne and McAlester coals, similarly situated as the same beds in tract 11. The dip at the south side is about 20° , gradually decreasing to about 5° on the north side. The McAlester coal crops out across and near the south end of the tract. The area of the McAlester coal is approximately 810 acres.

TRACT NO. 14.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4.....	2	5	20	122. 61
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	2	5	20	40
Lot 1.....	3	5	20	41. 14
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	20	40
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	6	20	40
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	34	6	20	160
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	35	6	20	160
W. $\frac{1}{2}$	35	6	20	320
Total area.....				923. 75
Occupied by railroad.....				12. 56

Tract 14 contains both the Hartshorne and McAlester coals, the former being at a depth of 800 to 1,000 feet beneath the southeast corner. The dip is a little west of north, about 20° on the south side and decreases to about 10° on the north side. The tract contains approximately 650 acres of McAlester coal.

TRACT NO. 15.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	2	5	20	80
S. $\frac{1}{2}$	2	5	20	320
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	2	5	20	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	3	5	20	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	5	20	80
N. $\frac{1}{2}$	11	5	20	320
Total area.....				920

This tract contains only the Hartshorne coal, which dips toward the north about 20° . The tract contains approximately 800 acres of coal.

TRACT NO. 16.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 4	1	5	20	40. 28
Lot 1	2	5	20	40. 43
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	6	20	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	6	20	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6	20	40
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	6	20	40
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	35	6	20	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	6	20	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	36	6	20	40
W. $\frac{1}{2}$	36	6	20	320
Total				920. 71
Occupied by railroad				12. 56

Tract 16 contains both the Hartshorne and McAlester coals, the former being at a depth of 700 to 900 feet beneath the southern border. The dip is toward the north 10° to 15° . The McAlester coal crops out very near but south of the railroad, and has an area of about 720 acres in this tract.

TRACT NO. 17.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, and 3	1	5	20	120. 36
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	5	20	160
S. $\frac{1}{2}$	1	5	20	320
N. $\frac{1}{2}$	12	5	20	320
Total area				920. 36

Tract 17 contains only the Hartshorne coal and it occurs under the same conditions of structure as in tract 15. The tract contains about 830 acres of the coal.

TRACT NO. 18.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	6	20	80
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	36	6	20	160
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	36	6	20	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	6	21	80
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	6	21	80
Lots 3 and 4.....	30	6	21	75.04
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	6	21	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	6	21	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	6	21	40
Lots 1, 2, 3, and 4.....	31	6	21	150.96
Total area.....				946
Occupied by railroad.....				12.29

Tract 18 contains both the Hartshorne and McAlester coals, the former being at a depth of about 1,000 feet in the south end. The McAlester coal crops in an east-west direction very near the centers of the SE. $\frac{1}{4}$ of sec. 36 and the SW. $\frac{1}{4}$ of sec. 31. This coal has an area of about 740 acres.

TRACT NO. 19.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4.....	6	5	21	118.79
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	5	21	80
SE. $\frac{1}{4}$	6	5	21	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	5	21	80
Lots 5, 6, and 7.....	6	5	21	114.63
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	5	21	40
NE. $\frac{1}{4}$	7	5	21	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	5	21	80
Lots 1 and 2.....	7	5	21	76.81
Total area.....				910.23

This tract contains only the Hartshorne coal. The dip of the coal varies from 20° in the south side to 15° in the north side. The tract contains approximately 800 acres of coal.

TRACT NO. 20.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 3 and 4.....	5	5	21	81.56
Lot 1	6	5	21	40.56
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	6	21	80
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	6	21	80
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	31	6	21	160
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	6	21	40
W. $\frac{1}{2}$	32	6	21	320
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	6	21	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	32	6	21	40
Total area.....				922.12
Occupied by railroad.....				12.20

Tract 20 contains both the Hartshorne and McAlester coals, the former occurring about 850 feet beneath the south end. The coals dip toward the north at about 15° , decreasing gradually to about 5° in the north side. The tract contains approximately 620 acres of McAlester coal.

TRACT NO. 21.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1 and 2.....	5	5	21	82.12
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	5	5	21	160
S. $\frac{1}{2}$	5	5	21	320
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	8	5	21	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	8	5	21	80
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6	21	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	6	21	40
Total area.....				922.12

Tract 21 contains only the Hartshorne coal, which crops out very near the southern border. The dip at the crop is about 25° and decreases gradually northward to 10° to 15° in the north side. The area of coal is approximately 840 acres.

TRACT NO. 22.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	28	6	21	160
N. $\frac{1}{2}$	29	6	21	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	29	6	21	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	29	6	21	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	6	21	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	32	6	21	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	6	21	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	6	21	40
Total area.....				960
Occupied by railroad.....				6.10

Only the McAlester coal is accessible in this tract, and it crops out across and very near the south end. The dip is toward the north approximately 10° at the outcrop. It decreases gradually toward the north, the coal bed becoming flat in the northern part of the tract.

TRACT NO. 23.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$	17	6	21	320
All of.....	20	6	21	640
Total				960

This tract contains only the McAlester coal, which approaches the surface in the northeastern part, dipping at a very low angle toward the southwest beneath the mountain. In the southern part of the tract the coal bed is practically flat.

TRACT NO. 24.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 4	3	5	21	40.55
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	3	5	21	20
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	5	21	40
Lots 1, 2, 3, and 4	4	5	21	163.60
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	4	5	21	160
S. $\frac{1}{2}$	4	5	21	320
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	5	21	160
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	5	21	20
Total area.....				924.15

Tract 24 contains only the Hartshorne coal, which occurs under practically the same conditions as in tract 21. The tract contains approximately 870 acres of Hartshorne coal, the outcrop being near the southern edge.

TRACT NO. 25.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	28	6	21	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	28	6	21	160
E. $\frac{1}{2}$	33	6	21	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	33	6	21	160
Total area				960
Occupied by railroad				9. 15

In tract 25 the McAlester coal crops in an east-west direction near the center of the SE. $\frac{1}{4}$ of sec. 33, dipping toward the north about 13° . The dip gradually decreases toward the north, becoming flat in the northern part of the tract. The Hartshorne coal is at a depth of 1,000 to 1,200 feet beneath the southern border, and, like the McAlester coal, it dips north, becoming flat in the northern part of the tract. There are about 840 acres of McAlester coal in the tract.

TRACT NO. 26.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$	16	6	21	320
All of	21	6	21	640
Total area				960

Only the McAlester coal is accessible in this tract, one of the beds coming to the surface in the northern part. The dip is very low toward the south, becoming flat in the southern part.

TRACT NO. 27.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Redoak town site.</i>				
Lots 2 and 3.....	3	5	21	80. 80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	21	40
SE. $\frac{1}{4}$	3	5	21	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	5	21	80
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	5	21	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	3	5	21	20
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	3	5	21	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	5	21	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	5	21	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	5	21	20
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	34	6	21	160
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	21	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	21	20
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	21	10
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	21	2. 50
S. $\frac{1}{2}$ of S. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6	21	10
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6	21	20
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6	21	5
				868. 30
<i>Lands within Redoak town site.</i>				
[Only the deposits of coal or asphalt in or under the land will be sold.]				
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	21	5
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	21	2. 50
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6	21	20
N. $\frac{1}{2}$ of S. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6	21	10
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6	21	10
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6	21	5
				52. 50
Total area.....				920. 80
Occupied by cemetery.....				5
[Only the deposits of coal or asphalt in or under the land will be sold.]				

This tract contains both the Hartshorne and McAlester coals, the former cropping out very near the southern border, dipping toward the

north about 25° . The dip gradually changes northward, reaching about 10° in the northern part of the tract. There are about 850 acres of Hartshorne coal in the tract. The McAlester bed crops out across the center of the south half of section 34. Both beds of the McAlester coal, which are separated here by about 60 feet of shale, have been prospected here and shown to be 30 inches to 3 feet thick each.

TRACT NO. 28.

	Section.	Township north.	Range east.	Acres.
<i>Lands outside of Redoak town site.</i>				
All of	27	6	21	640
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	6	21	80
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	21	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	21	20
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	21	10
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	21	2.50
N. $\frac{1}{2}$ of N. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	10
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	5
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	2.50
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	20
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	10
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	2.50
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	5
				887.50
<i>Lands within Redoak town site.</i>				
[Only the deposits of coal or asphalt in or under the land will be sold.]				
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	21	5
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	21	2.50
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	20
S. $\frac{1}{2}$ of N. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	10
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	20
S. $\frac{1}{2}$ of N. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	10
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	2.50
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	21	2.50
				72.50
Total area				960
Occupied by railroad				7.07

Only the McAlester coals are accessible in tract No. 28, being about 200 feet below the surface along the southern border, and dipping toward the north at about 10° . The dip gradually decreases toward the north, the beds becoming flat in the northern part of the tract.

TRACT NO. 29.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$	15	6	21	320
All of.....	22	6	21	640
Total area.....				960

Only the McAlester coal is accessible, and it is believed that one of the beds comes to the surface near the north side of section 22. The dips are low toward the south, the beds becoming flat in the southern part of the tract.

TRACT NO. 30.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	5	21	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	5	21	40
Lot 4.....	1	5	21	40.60
Lots 1, 2, 3, and 4.....	2	5	21	161.76
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	2	5	21	160
S. $\frac{1}{2}$	2	5	21	320
Lot 1.....	3	5	21	40.25
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	21	40
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	6	21	40
Total area.....				922.61

This tract contains only the Hartshorne coals, dipping toward the north at 25° to 28° at the outcrop. The dips gradually change toward the north, reaching 15° in the northern part. The tract contains about 900 acres of coal.

TRACT NO. 31.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	26	6	21	160
W. $\frac{1}{2}$	26	6	21	320
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	35	6	21	160
W. $\frac{1}{2}$	35	6	21	320
Total area.....				960
Occupied by railroad.....				9. 15

The Hartshorne coal occurs in this tract at a depth of about 1,200 feet beneath the southern border, dipping toward the north at about 10° to 15° . The McAlester coal crops out in an east-west direction a fourth of a mile from the southern border. The dips decrease gradually northward, the beds becoming flat in the northern part of the tract. There are 800 acres of McAlester coal in tract 31.

TRACT NO. 32.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$	14	6	21	320
All of.....	23	6	21	640
Total area.....				960

The McAlester coal which approaches the surface in the northern part can be mined in this tract. The dips are low toward the south in the northern part, becoming flat in the southern part. The Hartshorne coals are at a depth of nearly 1,300 feet beneath the north half of the tract.

TRACT NO. 33.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	25	6	21	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	6	21	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	6	21	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	6	21	40
All of.....	36	6	21	640
Total area.....				960
Occupied by railroad.....				15. 25

The Hartshorne coal occurs at a depth of 1,000 to 1,200 feet beneath the southern border of tract 33, and the McAlester coal crops out a fourth of a mile from the border, dipping toward the north. The dips decrease gradually from about 15° in the southern part to 5° in the northern part. The tract contains 800 acres of McAlester coal.

TRACT NO. 34.

	Sec- tion.	Town- ship- north.	Range east.	Acres.
S. $\frac{1}{2}$	24	6	21	320
N. $\frac{1}{2}$	25	6	21	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	25	6	21	160
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	6	21	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	6	21	80
Total area				920

Both the Hartshorne and McAlester coals occur beneath the tract, the latter being at a depth of a few hundred feet beneath the northwest corner and west side. The coal beds are practically flat. The west end of Cavanal Mountain terminates near the center of this tract.

TRACT NO. 35.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$	13	6	21	320
N. $\frac{1}{2}$	24	6	21	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	6	22	80
Lots 3 and 4	18	6	22	74. 14
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	6	22	80
Lots 1 and 2	19	6	22	74. 76
Total area				948. 90

In tract 35 the McAlester coal approaches the surface near the northwest corner, dipping toward the south at a low angle. The Hartshorne beds are about 1,200 feet beneath in the northern half of the tract.

TRACT NO. 36

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$	30	6	22	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	6	22	80
Lots 3 and 4	30	6	22	76.02
NE. $\frac{1}{4}$	31	6	22	160
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	6	22	80
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	6	22	160
Lots 1, 2, 3, and 4	31	6	22	152.04
Total area				868.06
Occupied by railroad				10.50

The McAlester coal crops out in an east-west direction near the southern border of the tract, dipping toward the north 15° to 20° . The Hartshorne coal is at a depth of 1,200 to 1,300 feet in the south side, dipping toward the north conformably with the McAlester beds. The dips decrease toward the north, reaching about 5° in the northern part of the tract. The tract contains about 800 acres of McAlester coal.

TRACT NO. 37.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$	18	6	22	160
E. $\frac{1}{4}$	19	6	22	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	6	22	80
Lots 3 and 4	19	6	22	75.64
NE. $\frac{1}{4}$	30	6	22	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	6	22	80
Lots 1 and 2	30	6	22	76.06
Total area				951.70

The McAlester coal approaches the surface in the northern part of the tract, dipping toward the south at low angles. In the southern part the beds are practically flat. The Hartshorne beds are about 1,200 feet beneath the surface in the north end of the tract.

TRACT NO. 38.

	Section.	Township north.	Range east.	Acres.
S. $\frac{1}{2}$	29	6	22	320
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	6	22	40
N. $\frac{1}{2}$	32	6	22	320
SE. $\frac{1}{4}$	32	6	22	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	6	22	80
Total area.....				920
Occupied by railroad.....				13.73

This tract contains both the Hartshorne and McAlester coals. The Hartshorne beds are at a depth of about 1,200 feet beneath the south end. The dips become gradually less toward the north, but will not be found below 10° . The McAlester bed crops out near the south end of the tract and it has an area of about 880 acres.

TRACT NO. 39.

	Section.	Township north.	Range east.	Acres.
Lots 3 and 4.....	4	5	22	80.35
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	5	22	80
Lots 1, 2, 3, and 4.....	5	5	22	161.12
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	5	5	22	160
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	5	5	22	160
Lot 1.....	6	5	22	40.25
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	6	5	22	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	6	6	22	40
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	6	22	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	6	22	80
Total area.....				881.72

This tract contains both the Hartshorne and McAlester coals, the outcrop of the former being near the southern border, with dip toward the north at 25° to 30° . There is little change in the slope of the bed northward through the tract. The McAlester coal crops out near the northern border and has an area of nearly 60 acres in the tract. The Hartshorne coals have an area of about 800 acres.

TRACT NO. 40.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$	27	6	20	160
S. $\frac{1}{2}$	28	6	20	320
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	6	20	80
W. $\frac{1}{2}$	33	6	20	320
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	6	20	80
Total area.....				960
Occupied by railroad.....				6.10

The Hartshorne coal occurs at a depth of 1,000 to 1,200 feet beneath the southwest corner of the tract dipping toward the north 20° to 30° . The dips decrease gradually, reaching 10° to 15° in the northern part. The McAlester coal crops out across near the south side of section 33. The tract contains about 900 acres of McAlester coal.

TRACT NO. 41.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	6	22	80
S. $\frac{1}{2}$	26	6	22	320
SE. $\frac{1}{4}$	27	6	22	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	6	22	80
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	35	6	22	160
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	6	22	160
Total area.....				960
Occupied by railroad.....				6.12

Tract 41 contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tract 40, except that the Hartshorne coals are at a depth of 800 to 1,000 feet beneath the southeast corner. The area of the McAlester coal is approximately 825 acres.

TRACT NO. 42.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Fanshawe town site.</i>				
SE. $\frac{1}{4}$	25	6	22	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	6	22	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	6	22	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	6	22	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	23	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	6	23	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	23	40
Lot 4	30	6	23	37. 11
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	6	23	80
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	6	23	5
W. $\frac{1}{2}$ of E. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	6	23	10
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	6	23	20
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	6	23	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	31	6	23	80
Lots 1 and 2	31	6	23	74. 39
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	6	23	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	6	23	10
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	6	23	5
				921. 50
<i>Lands within Fanshawe town site.</i>				
[Only the deposits of coal or asphalt in or under the land will be sold.]				
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	6	23	5
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	6	23	20
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	6	23	5
				30
Total area				951. 50
Occupied by railroad				24. 31

The McAlester coals crop out very near the southern border of the tract dipping north at 25° to 30° and the Hartshorne coals are at a depth of 1,200 to 1,300 feet. Dips decrease northward to less than 20° in the north border. The entire area of the tract is underlain by both the Hartshorne and McAlester beds.

TRACT NO. 43.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4	1	5	22	160.44
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	5	22	160
Lot 1	2	5	22	40.31 •
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	5	22	40
Lots 4 and 5	6	5	23	75.74
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	6	22	80
SE. $\frac{1}{4}$	36	6	22	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	36	6	22	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	6	22	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	6	23	40
Lots 3 and 4	31	6	23	74.69
Total area				951.18
Occupied by railroad				9.18

Tract No. 43 contains both the Hartshorne and McAlester coals, the former cropping out near the southern border with dips toward the north at 30° to 35° . The dips decrease to about 20° in the north side of the tract. The McAlester coals occur in about 140 acres at the north end. The area of Hartshorne coals in the tract is approximately 860 acres.

TRACT NO. 44.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Fanshawe town site.</i>				
Lots 2, 3, and 4	5	5	23	125.06
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	5	23	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	5	23	80
Lots 1, 2, and 3	6	5	23	123.27
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	5	23	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	5	23	40
SE. $\frac{1}{4}$	31	6	23	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	6	23	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6	23	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	6	23	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	23	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	23	20
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	23	10

TRACT NO. 44—Continued.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Fanshawe town site—Continued.</i>				
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	23	5
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	23	2. 50
<i>Land within Fanshawe town site.</i>				925. 83
[Only the deposits of coal or asphalt in or under the land will be sold.]				
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6	23	2. 50
Total area				928. 33

Tract 44 contains only the Hartshorne coals, which occur under practically the same conditions of structure as found in tract 43. The area of the Hartshorne coal in tract 44 is nearly 840 acres.

TRACT NO. 45.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 3 and 4	4	5	23	83. 02
Lot 1	5	5	23	41. 58
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	5	23	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	6	23	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	29	6	23	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	23	40
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	32	6	23	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	6	23	80
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	6	23	80
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	33	6	23	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{2}$	33	6	23	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	6	23	80
Total area				924. 60
Occupied by railroad				17. 59

Tract 45 contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 42 and 44. The area of the Hartshorne coal in the above tract is approximately 880 acres, and that of the McAlester about 480 acres.

TRACT NO. 46.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1 and 2.....	4	5	23	82. 82
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	27	6	23	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	28	6	23	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	6	23	40
E. $\frac{1}{2}$	33	6	23	320
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	33	6	23	40
W. $\frac{1}{2}$	34	6	23	320
Total area.....				922. 82
Occupied by railroads.....				12. 24

Tract 46 contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tract 45. There are approximately 880 acres of Hartshorne coal and 400 acres of McAlester coal in tract 46.

TRACT NO. 47.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	6	23	80
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	27	6	23	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	27	6	23	40
E. $\frac{1}{2}$	34	6	23	320
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	6	23	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6	23	40
W. $\frac{1}{2}$	35	6	23	320
Total area.....				960
Occupied by railroads.....				13. 34

Tract 47 contains both the Hartshorne and McAlester coals which occur under practically the same conditions of structure as in tracts 45 and 46. The area of the Hartshorne coal in this tract is approximately 860 acres, while that of the McAlester is about 530 acres. A small area of coal was removed from the southeast corner of this tract previous to 1890; the exact amount it is now impossible to determine.

TRACT NO. 48.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	25	6	23	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	6	23	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	6	23	80
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6	23	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	6	23	40
N. $\frac{1}{2}$	36	6	23	320
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	36	6	23	40
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	36	6	23	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	6	23	40
Total				960
Occupied by railroads				34.22

The above tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as found in tracts 45, 46, and 47. The area of the Hartshorne coal is approximately 900 acres and that of the McAlester about 540 acres.

Total unleased segregated lands in Wilburton division, 44,346.37 acres.

DESCRIPTION OF TRACTS, STIGLER DIVISION.

TRACT NO. 49.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$	4	9	20	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	9	20	80
E. $\frac{1}{2}$	8	9	20	320
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	9	9	20	80
W. $\frac{1}{2}$	9	9	20	320
Total area				960

Tract 49 lies in the central part of the shallow basin of the Stigler district, and the coal lies nearly flat within a few hundred feet of the surface.

TRACT NO. 50.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	9	20	40
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	16	9	20	80
SE. $\frac{1}{4}$	16	9	20	160
W. $\frac{1}{2}$	16	9	20	320
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	17	9	20	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	9	20	40
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	21	9	20	160
Total area.....				960

Tract No. 50 lies in the southeast side of the shallow Stigler basin. It is estimated that the coal comes to the surface in the south side, dipping 1 to 2° toward the north. It is believed that the coal will not exceed 100 feet in depth anywhere in the tract.

TRACT NO. 51.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$	3	9	20	160
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	3	9	20	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	9	20	40
SE. $\frac{1}{4}$	4	9	20	160
NE. $\frac{1}{4}$	9	9	20	160
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	9	9	20	80
W. $\frac{1}{2}$	10	9	20	320
Total area.....				960

This tract lies in the central part of the basin, and the coal lies nearly flat within a few hundred feet of the surface.

TRACT NO. 52.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4.....	2	9	20	121.55
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	9	20	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	2	9	20	80
SW. $\frac{1}{4}$	2	9	20	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	9	20	80
Lots 1, 2, 3, and 4.....	3	9	20	162.48
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	3	9	20	80
SE. $\frac{1}{4}$	3	9	20	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	3	9	20	40
Total area.....				924.03

Tract 52 is in the central part of the basin, and the coal is nearly flat and within a few hundred feet of the surface.

TRACT NO. 53

	Sec- tion.	Town- ship north.	Range east.	Acres.
E $\frac{1}{2}$	10	9	20	320
All of.....	11	9	20	640
Total area.....				960

The Stigler coal crops across the southeast corner of tract 53, dipping toward the northwest about 2°. The coal in the western part of the tract is nearly flat.

TRACT NO. 54.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	9	20	40
SW. $\frac{1}{4}$	14	9	20	160
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	14	9	20	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	14	9	20	80
N. $\frac{1}{2}$	15	9	20	320
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	15	9	20	80
SW. $\frac{1}{4}$	15	9	20	160
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	9	20	40
Total area.....				920

The coal in tract No. 54 crops out around the hill in the SW. $\frac{1}{4}$ of sec. 14, where the dip is very low toward the northwest. The Stigler coal is being mined for local consumption in the northwest side of the hill. The coal also crops out across the NW. $\frac{1}{4}$ of sec. 14 and the SE. $\frac{1}{4}$ of 15, dipping at low angles toward the northwest. In the northwestern part of the tract the coal is nearly flat. There are about 820 acres of coal in tract 54.

TRACT NO. 55.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4.....	1	9	20	120.90
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	1	9	20	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	1	9	20	80
SW. $\frac{1}{4}$	1	9	20	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	1	9	20	80
Lot 1.....	2	9	20	40.49
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	9	20	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	2	9	20	80
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	12	9	20	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	9	20	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	9	20	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	12	9	20	80
Total area.....				881.39

The Stigler coal in tract 55 crops out very near the south end, dipping north at low angles. The northwestern part of the tract lies near the center of the basin, where the coal will be found to lie practically flat.

TRACT NO. 56.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	1	9	20	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	1	9	20	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	12	9	20	80
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	9	21	80
SE. $\frac{1}{4}$	6	9	21	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	9	21	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	9	21	40
Lots 5, 6, and 7.....	6	9	21	114.80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	7	9	21	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	7	9	21	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	9	21	80
Lots 1 and 2.....	7	9	21	76.69
Total area.....				951.40

The coal in tract 56 will be found to be in all respects practically the same as in tract 55. The outcrop of the coal is in the southeast side, but its exact location could not be determined.

TRACT NO. 57.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	10	20	80
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	26	10	20	160
E. $\frac{1}{2}$	35	10	20	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	35	10	20	160
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	10	20	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	10	20	40
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	10	20	160
Total area				960

Tract 57 lies in the central part of the Stigler basin, and the coal is nearly flat and is within a few hundred feet of the surface.

TRACT NO. 58.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	23	10	20	80
SE. $\frac{1}{4}$	23	10	20	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	23	10	20	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	24	10	20	80
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	10	20	80
NE. $\frac{1}{4}$	26	10	20	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	26	10	20	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	10	20	40
Part of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	10	20	39.77
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	10	20	40
Part of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	10	20	39.98
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	10	20	80
Total area				959.75

Tract No. 58 lies in the central part of the Stigler basin, the coal being nearly flat and within a few hundred feet of the surface.

TRACT NO. 59.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	10	20	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	13	10	20	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	10	20	40
E. $\frac{1}{2}$	24	10	20	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	24	10	20	160
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	24	10	20	80
NE. $\frac{1}{4}$	25	10	20	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	10	20	80
Total area				960

Tract No. 59 lies in the northwest side of the Stigler basin. The coal is beneath the surface, and dips toward the southeast at a very low angle.

TRACT NO. 60.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$	25	10	20	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	10	20	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	10	20	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	10	20	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	10	21	80
SE. $\frac{1}{4}$	30	10	21	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	10	21	80
Lots 3 and 4	30	10	21	76.42
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	10	21	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	10	21	40
Lot 1	31	10	21	38.28
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	10	21	40
Total area				954.70

Tract No. 60 lies in the central part of the Stigler basin. The coal is beneath the surface and will be found to lie nearly flat.

TRACT NO. 61.

	Section.	Township north.	Range east.	Acres.
Lot 1	1	10	20	40.06
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	10	20	80
SE. $\frac{1}{4}$	36	10	20	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	36	10	20	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	10	20	40
Lots 2, 3, and 4	6	9	21	118.58
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	10	21	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	10	21	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	10	21	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	31	10	21	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	10	21	40
Lots 2, 3, and 4	31	10	21	114.84
Total area				953.48

Tract 61 lies in the central part of the basin. The coal is nearly flat and within a few hundred feet of the surface.

TRACT NO. 62.

	Section.	Township north.	Range east.	Acres.
Lots 1, 2, 3, and 4	5	9	21	161.20
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	5	9	21	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	5	9	21	40
SW. $\frac{1}{4}$	5	9	21	160
Lot 1	6	9	21	40.25
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	10	21	40
S. $\frac{1}{2}$	32	10	21	320
Total area				921.45

This tract is in the south side of the basin, the coal cropping very near the eastern boundary and dipping a few degrees toward the northwest. The inclination of the coal decreases toward the northwest.

TRACT NO. 63.

	Section.	Township north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	10	21	40
E. $\frac{1}{2}$	18	10	21	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	10	21	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	18	10	21	40
Lots 3 and 4.....	18	10	21	75.63
NE. $\frac{1}{4}$	19	10	21	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	10	21	80
Lots 1 and 2.....	19	10	21	75.88
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	10	21	80
Total area.....				951.51

Tract 63 lies in the northwest side of the basin, the coal cropping out very near the north border. The dip at the outcrop is toward the southeast 2° - 3° . This inclination decreases toward the southeast until the coal becomes practically flat in the southern part of the tract.

TRACT NO. 64.

	Section.	Township north.	Range east.	Acres.
SE. $\frac{1}{4}$	19	10	21	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	10	21	80
Lots 3 and 4.....	19	10	21	75.96
SW. $\frac{1}{4}$	20	10	21	160
NW. $\frac{1}{4}$	29	10	21	160
NE. $\frac{1}{4}$	30	10	21	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	10	21	80
Lots 1 and 2.....	30	10	21	76.14
Total area.....				952.10

Tract 64 lies a little south of the center of the basin, and the coal will be found to dip toward the southeast at a very low angle in the northwestern part. It is estimated that the coal is within easy reach of mining at any place in the tract.

TRACT NO. 65.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	10	21	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	10	21	80
SE. $\frac{1}{4}$	29	10	21	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	10	21	80
NE. $\frac{1}{4}$	32	10	21	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	10	21	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	10	21	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	10	21	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	10	21	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	10	21	80
NW. $\frac{1}{4}$	33	10	21	160
Total area				960

Tract No. 65 is in the south side of the basin, the coal cropping out very near the eastern boundary. The dips are low toward the west, becoming nearly flat in the western part.

TRACT NO. 66.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	10	21	80
E. $\frac{1}{2}$	17	10	21	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	17	10	21	160
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	10	21	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	17	10	21	80
NE. $\frac{1}{4}$	20	10	21	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	10	21	80
Total area				920

Tract 66 lies in the northwest side of the basin, the coal cropping very near the extreme northern border and dipping toward the south-east 2° - 3° . The south end of the tract is in the center of the basin, where the coal is almost flat.

TRACT NO. 67.

	Section.	Township north.	Range east.	Acres.
SE. $\frac{1}{4}$	20	10	21	160
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	21	10	21	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	10	21	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	28	10	21	160
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	10	21	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	10	21	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	10	21	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	10	21	80
NE. $\frac{1}{4}$	29	10	21	160
Total area				960

Tract 67 is in the southeast side of the Stigler basin, the coal cropping very near the eastern boundary. The dips are low toward the west, becoming nearly flat in the western part.

TRACT NO. 68.

	Section.	Township north.	Range east.	Acres.
S. $\frac{1}{2}$	9	10	21	320
SW. $\frac{1}{4}$	10	10	21	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	10	21	80
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	10	21	80
N. $\frac{1}{2}$	16	10	21	320
Total area				960

Tract 68 lies in the northwest side of the Stigler basin, the coal cropping very near the extreme northern border and dipping toward the southeast 2° - 3° . The south end of the tract is in the center of the basin, where the coal is nearly flat.

TRACT NO. 69.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	15	10	21	80
S. $\frac{1}{2}$	16	10	21	320
N. $\frac{1}{2}$	21	10	21	320
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	21	10	21	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	22	10	21	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	22	10	21	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	22	10	21	40
Total area				960

The Stigler coal crops out near the southeast side of tract 69, dipping at low angles toward the northwest. The northwestern part of the tract is in the center of the basin, where the coal is practically flat.

TRACT NO. 70.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	10	10	21	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	10	21	80
SE. $\frac{1}{4}$	10	10	21	160
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	11	10	21	160
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	14	10	21	80
NE. $\frac{1}{4}$	15	10	21	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	15	10	21	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	15	10	21	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	15	10	21	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	10	21	80
Total area				960

Tract 70 lies across the central part of the Stigler basin, the coal cropping out near the north and south ends and dipping toward the center at low angles.

TRACT NO. 71.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of	11	10	21	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	11	10	21	160
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	10	21	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	12	10	21	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	10	21	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	12	10	21	80
NW $\frac{1}{4}$	12	10	21	160
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	14	10	21	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	14	10	21	40
Total area				960

This tract lies in the southeast side of the basin and extends across its center. The coal dips toward the northwest 1° - 2° from its outcrop near the southeast side.

TRACT NO. 72.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	10	21	160
S. $\frac{1}{2}$	1	10	21	320
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	2	10	21	80
SE. $\frac{1}{4}$	2	10	21	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	10	21	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	10	21	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	12	10	21	80
Total area				920

Tract No. 72 lies across the central part of the Stigler basin, the coal cropping across the southeast and northwest corners, dipping toward the central part at a low angle.

TRACT NO. 73.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4	1	10	21	160. 24
Lot 1	2	10	21	40. 15
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	11	21	80
S. $\frac{1}{2}$	36	11	21	320
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	11	21	40
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	11	22	40
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	11	22	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	31	11	22	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	11	22	40
Lots 2, 3, and 4	31	11	22	114. 20
Total area				954. 59

Tract 73 lies across the Stigler basin, the coal cropping near the east and west ends, dipping toward the center at low inclination.

TRACT NO. 74.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	11	21	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	25	11	21	80
SE. $\frac{1}{4}$	25	11	21	160
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	11	21	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	11	21	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	19	11	22	40
Lot 4	19	11	22	37. 96
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	11	22	40
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	30	11	22	160
Lots 1, 2, 3, and 4	30	11	22	152. 04
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	11	22	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	11	22	40
Lot 1	31	11	22	37. 96
Total area				947. 96

Tract 74 lies across the central part of the Stigler basin. The coal in the west side dips toward the southeast about 5° , while in the north end the dips are toward the south 15° to 20° . The dip in the southeastern part is toward the northwest at 5° and less. This coal has been pros-

pected quite extensively in the north side of the tract and mined for local consumption.

TRACT NO. 75.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	11	22	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	29	11	22	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	11	22	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	11	22	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	11	22	80
NW. $\frac{1}{4}$	29	11	22	160
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	30	11	22	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	11	22	40
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	11	22	80
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	11	22	40
Total area				760

Tract 75 lies in the northeast end of the Stigler basin. The coal in the northwestern part dips toward the south 15° - 20° . In the eastern and southeastern parts of the tract the coal dips toward the west and northwest at about 5° . In the central and western parts of the tract the coal is within a few hundred feet of the surface and lies nearly flat.

	Acres.
Total unleased segregated lands in the Stigler division	25,392.45
Total unleased segregated lands in Wilburton division	44,346.37
Total, Wilburton-Stigler district	69,738.82

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., June 11, 1904.

Circular No. 2 of the coal and asphalt lands in Wilburton-Stigler district (No. 2) is respectfully returned to the Secretary of the Interior with recommendation that it be approved.

A. C. TONNER,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., June 22, 1904.

Approved.

E. A. HITCHCOCK, *Secretary.*

22 E.

94°50'



T.6 N.

Tract	Acres
1	739.18
2	840.00
3	600.00
4	950.93
5	960.00
6	921.69
7	927.11
8	917.05
9	923.70
10	960.00
11	921.74
12	960.00
13	923.31
14	923.75
15	920.00
16	920.71
17	920.36
18	946.00
19	910.23
20	922.12
21	922.12
22	960.00
23	960.00
24	924.15
25	960.00
26	960.00
27	920.80
28	960.00
29	960.00
30	922.61
31	960.00
32	960.00
33	960.00
34	920.00
35	948.90
36	868.06
37	951.70
38	920.00
39	881.72
40	960.00
41	960.00
42	951.50
43	981.18
44	928.33
45	924.60
46	922.82
47	960.00
48	960.00

T.5 N.

94°50'





DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 3.

DEC 1 1904

MAPS OF SEGREGATED COAL LANDS

IN THE

Howe-Poteau District, Choctaw Nation,
Indian Territory,

WITH

DESCRIPTION OF THE UNLEASED SEGREGATED COAL LANDS.

BY

JOSEPH A. TAFF.

Bids for the purchase of tracts within this district will be opened by the Commissioner of Indian Affairs at his office in Washington at 2 o'clock p. m. (Eastern time), Monday, February 6, 1905.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

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2-06.6.5.

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ILLUSTRATIONS.

Map of Howe-Poteau district (Howe sheet), Indian Territory, showing segregated coal lands and coal outcrops	At end.
Map of Howe-Poteau district (Poteau sheet), Indian Territory, showing segregated coal lands and coal outcrops	At end.

LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., June 6, 1904.

SIR: I have the honor to transmit herewith descriptive texts on the unleased segregated coal lands in the Howe-Poteau district, Choctaw Nation, Ind. T., prepared by Mr. Joseph A. Taff in accordance with instructions contained in your letter of May 16, 1904. It is proposed that this report be published as circular No. 3 for the information of those submitting bids in the third sale of unleased segregated coal lands.

Very respectfully,

CHAS. D. WALCOTT,
Director.

HON. E. A. HITCHCOCK,
Secretary of the Interior.

DESCRIPTION OF THE UNLEASED SEGREGATED COAL LANDS IN THE HOWE-POTEAU DISTRICT, CHOCTAW NATION, INDIAN TERRITORY.

INTRODUCTORY REMARKS.

The Howe-Poteau district contains seven coal beds of workable thickness. Four of these are the two Hartshorne coal beds and the two beds provisionally classed with the McAlester coal of the McAlester district. These four coal beds are the only ones known to be worthy of consideration in the southern or Howe division of the district and they have continuous outcrops eastward from the Wilburton division of the Wilburton-Stigler district. The fifth coal bed, known locally as the Cavanal bed, occurs above the McAlester coals and outcrops parallel with them in the western part of the district. The other two coal beds occur above the Cavanal coal and are known to be of workable thickness only around the north, east, and south sides and in Cavanal Mountain. These beds are known locally as the Witteville coals from the mining town in the east end of Cavanal Mountain. Because of the related occurrence of these coal beds the segregated coal lands including them are grouped, for convenience of sale, in a single district. The southern part of the district including lands underlain by the Hartshorne and McAlester coal beds is mapped and described as the Howe division. The Cavanal and Witteville coal beds are limited to the northern part of the district and are mapped and described as the Poteau division. The tracts of the unleased segregated lands that are to be sold are numbered consecutively through the whole district, beginning with the Howe division. These tracts contain as near as may be, but do not exceed, 960 acres, as provided by law, and are colored blue on the map. Lands under lease are not to be sold until further action of Congress. The leases are bounded on the map by heavy black lines and each lease bears the leaseholder's name and the number.

In the season of 1899 the U. S. Geological Survey mapped the geology of the eastern part of the Choctaw coal fields and studied the occurrence of the coal. In 1900, a report entitled "The Eastern Choctaw Coal Field," briefly outlining the geology and setting forth the economic features of the coal, was published in Part II of the Twenty-first Annual Report of the Survey. In this work the entire area published was carefully surveyed, the outcrops of the principal

coal beds and other formations were located, their structure and positions beneath the surface determined with approximate exactness. In 1902, a brief report entitled "The Southwestern Coal Field," including the coals of Indian Territory, Arkansas, and Texas, was published in Part III of the Twenty-second Annual Report of the U. S. Geological Survey.

In the surveys in connection with the segregation of the coal lands the coal outcrops were retraversed and examined, aided by later mining developments.

Revision of previous locations and the extensions or the projection of new lines of railroad is, according to law, under the jurisdiction of the United States courts of Indian Territory. Any changes of existing lines or the building of new railroads on the segregated coal lands since March, 1903, have no authentic record in the Department of the Interior further than maps showing the plan of the proposed changes or projections.

CONDITIONS GOVERNING THE CLASSIFICATION OF COAL BEDS.

In the selection of these lands for segregation and sale the following criteria were considered of essential importance:

1. The coal should be of a quality and hardness to create a demand for its use for commercial purposes.
2. It should be thick enough to be worked successfully.
3. Its structure or position and depth in the earth should assure profitable mining.

In the description of each tract only those coal beds are considered to which the above qualifications can be applied.

In some coal regions it is found that certain coal beds are variable in thickness or quality, or that both the thickness and quality are matters of uncertainty within short distances. It has been found that all beds of coal as well as other rocks are variable in thickness and composition within wide range.

The rocks in the Howe-Poteau district are folded in such a manner that the coal beds come to the surface or crop out in long stretches, and the thickness and quality of the beds have been proved by extensive prospecting, or by mining throughout most of the surface occurrence. The folding of the strata also causes the coal to extend to depths reaching the limit of practical mining within a few miles at farthest from the outcrops of the beds. It is presumed that if particular beds of coal vary but slightly both in quality and thickness in various directions along outcrops through the district the same will be equally permanent within a few miles from the outcrop.

Locally variable thin beds of coal have been shown by drill records and by surface prospecting to occur in the district at various positions

in the rocks above the Hartshorne coal. The coal in these beds can not be profitably worked at present and will not be in demand until a time when the thicker beds are exhausted. This time is so indefinitely distant in the future that their presence is not considered to add any value to the lands.

DESCRIPTION OF THE UNLEASED SEGREGATED COAL LANDS IN THE HOWE DIVISION, CORRESPONDING TO THE HOWE MAP SHEET.

HARTSHORNE COAL.

The Howe division of the Howe-Poteau district contains both the Hartshorne and McAlester coals. The Hartshorne coal should occur everywhere in the district north of its outcrop, which extends along the entire southern and western borders. In the western part along its crop the dip of the coal varies from 15° to 45° toward the north. South of Howe the crop curves toward the south until in the vicinity of Heavener it turns southward and westward, dipping toward the east and south in the north side of the downward fold, locally known as the Mitchell basin. Along this course, from Howe southward, the coal varies in dip between 10° and 5° . Two to three miles south of Heavener the crop curves toward the south and then toward the east, around the west and south sides of the same basin. Continuing from the Mitchell basin the crop bears east-northeast to the State line south of Poteau Mountain. The dip of the Hartshorne coal increases eastward from 5° at the west end of the Mitchell basin to 25° a mile east of the St. Louis and San Francisco Railroad.

Only the lower of the two Hartshorne coals is being mined in this district at the present time. Both the upper and lower Hartshorne coal beds were mined previous to 1890 near the west end of the district where the former one was shown to be 3 feet 4 inches and the latter 4 feet thick. The upper coal has been penetrated by shafts and by the prospecting drill sunk upon the lower coal in the vicinity of Howe and is shown to be about 30 inches in thickness. The lower Hartshorne coal varies somewhat above and below $4\frac{1}{2}$ feet and is being mined and coked successfully in the vicinity of Howe. The upper coal increases in thickness toward the west since it is found to be 4 feet in thickness at the Turkey Creek mines 9 miles west of the border of this district, and it is most likely that it can be found to be profitable to work within the Howe district.

The Hartshorne coal in the Howe district in its relation to the contact rocks above and below is found to be practically the same as in the Wilburton district. The roof is usually a hard, slaty shale, locally giving place to sandstone. The floor is compact clay.

Proximate analyses of this coal are given below. The first is of the coal taken from the mines at Howe and the second is from what is considered to be the same coal $1\frac{1}{2}$ miles south of Heavener in the south side of the Mitchell basin.

Proximate analyses of Hartshorne coal.

Name of coal and place.	Mois- ture.	Volatile combus- tible matter.	Fixed carbon.	Ash.	Sul- phur.	Phos- phor- ous.
Hartshorne coal southwest of Howe, Ind. T.	0.45	20.89	68.86	9.80	0.69	0.063
Hartshorne coal near Heavener, Ind. T.	.48	22.03	71.28	6.21	1.13	.012

STRUCTURE OF THE HARTSHORNE COAL.

A deep and wide downward fold occupies the eastern part of the Howe division of the district in the central part of which lies Poteau Mountain. This fold is known as the Poteau syncline. The Hartshorne coal crops out in the south side of the fold, dipping northward 25° to 30° . The dips decrease gradually northward, reaching 15° to 20° at the foot of the mountain. Farther north, beneath the center of the mountain, the coal becomes flat and then rises farther north, but does not reach the surface, beneath the Choctaw, Oklahoma, and Gulf Railroad between Poteau and Sugarloaf mountains. The Mitchell basin is in the west end of the Poteau synclinal fold.

Westward from the vicinity of Howe to the western border of the district the Hartshorne coal increases gradually in dip from 15° to 45° along its outcrop. The dips decrease gradually, however, from this outcrop northward toward Cavanal Mountain until it passes beyond the depth of profitable mining.

From the vicinity of Howe 5 to 6 miles toward the northeast, and then toward the east to the State line between Poteau and Sugar Loaf mountains, followed approximately by the Choctaw, Oklahoma and Gulf Railroad, there is a low upward fold which is considered to bring the Hartshorne coal within the reach of profitable exploitation. This upward fold may be known as the Howe anticline.

McALESTER COALS.

Two coal beds which are considered to be practically in the position of the McAlester coals and which have been located across the southern part of the Wilburton district have been found in this district across the southern part of T. 6 N., R. 24 E. These coals are found to grow thinner across the Wilburton district and apparently continue

to decrease in thickness eastward in the Howe district. In the Howe district they are approximately 2 feet in thickness. They dip toward the north and outcrop in an east-west direction in the proximity of the Choctaw, Oklahoma, and Gulf, and the St. Louis and San Francisco railroads. Because of its good quality, proximity to transportation, and favorable situation structurally it is considered to be of some value.

Analyses of this coal from Howe have not been made. In physical appearance, however, it seems to be of equally as high grade as in the McAlester district.

DESCRIPTION OF THE UNLEASED SEGREGATED COAL LANDS IN THE POTEAU DIVISION, CORRESPONDING TO THE POTEAU MAP SHEET.

CAVANAL COAL.

Three coal beds of workable thickness have been found in the northern or Poteau division of the Howe-Poteau district. The lowest one of these has been known locally as the Cavanal coal, named for Cavanal station on the Frisco Railroad, near which it was first exploited. The outcrop of the Cavanal coal occurs in the foothills of the Cavanal Mountains, bearing in a general northeast-southwest direction parallel to the Frisco Railroad and situated at a distance of a mile to a mile and a half from it. The dip of the coal is prevailingly toward the mountain at an angle of 6° to 10° . The outcrop of the Cavanal coal was traced completely around Cavanal Mountain, but was not found to be of workable thickness except in the east and south sides.

The Cavanal coal as far as known varies in thickness from nearly 2 feet 3 inches to 3 feet 6 inches. It is clear of shale or other impurities, except locally within a few inches of the top where there are thin, shaly, and bony stringers associated with small iron sulphide concretions. The roof of the coal is a hard slaty shale and the floor is a compact clay. The quality of the coal is shown by the following proximate analysis:

Proximate analysis of Cavanal coal, Cavanal Station, Ind. T.

	Per cent.
Moisture	0.22
Volatile combustible matter.....	23.54
Fixed carbon	66.16
Ash	10.08
Sulphur	4.33
Phosphorus.....	.031

It will be seen by the composition of the coal that it contains too high a percentage of sulphur to be successfully utilized for the production of coke. Coal of this class, however, is used very extensively for steaming and other purposes.

WITTEVILLE COAL.

- The two highest coals in this district are known locally as the Witteville coals, having received their names from the mining village of Witteville, which is located in the east end of Cavanal Mountain, where both are exposed and the uppermost bed has been rather extensively mined. The outcrops of the Witteville beds mark almost horizontal lines around the south, east, and north sides of the mountain. Everywhere at the outcrop the dip is toward the central part of the mountain, varying between 6° and 10° . From the outcrop the coal extends through the mountain in a wide, shallow, synclinal fold. The outcrop of this upper Witteville bed was located around the mountain, but it is not known to be of workable thickness except in the north, east, and south sides of Cavanal Mountain itself. The lower bed, which is situated nearly 200 feet below the upper, has been prospected and mined to a limited extent at Witteville. One of the Witteville beds, but which of the two has not been determined beyond question, has been mined rather extensively at Sutter in the northwest base of the mountain. The Sutter mine is connected by a branch road to the Kansas City Southern Railway at Shadypoint.

The upper Witteville coal has a thickness of about 4 feet, so far as known, and contains a thin parting of shale or "bony" coal averaging about one-third of an inch thick. The roof of the coal is a hard slaty shale; the floor is of compact clay. The quality of the coal is indicated by the following analysis of Witteville coal from the Witteville mine. The lower bed at the outcrop at Witteville contains 42 inches of coal separated into three benches by two thin partings of bony coal and shale. The bed mined at Sutter contains nearly 4 feet of coal separated by two thin partings of shale.

Proximate analysis of Witteville coal, Witteville, Ind. T.

[Run of mine from Witteville.]		Per cent.
Moisture.....		0.48
Volatile combustible matter.....		23.82
Fixed carbon		66.69
Ash		9.01
Sulphur		4.64
Phosphorus		.02

The following analysis was made by the Ledoux Chemical Laboratory, of New York City, for the Cavanal Coal and Railway Company, operating at Witteville, in 1898:

Witteville coal, Witteville, Ind. T.

	Per cent.
Water	0.57
Volatile combustible matter.....	26.39
Fixed carbon	66.64
Ash	5.24
Sulphur	1.16
Phosphorus.....	Undetermined.

From the variation in the above analyses it is presumed that a selected sample was taken for the second. The same coal and railway company had samples of the coal from the Witteville mine washed and tests made to determine its coking properties. It is reported that the coal coked successfully, giving 65 per cent of coke.

DESCRIPTION OF TRACTS.

HOWE DIVISION, CORRESPONDING TO HOWE MAP SHEET.

TRACT NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres. -
SE. $\frac{1}{4}$	26	5 N.	25 E.	160.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	5 N.	25 E.	80.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	5 N.	25 E.	40.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	36	5 N.	25 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	5 N.	25 E.	80.00
Total area.....				520.00
Occupied by railroad.....				2.83

This tract lies in the extreme west end of the Mitchell basin and contains only the Hartshorne coal. In the northwest side the dip is toward the southeast, and in the south side it is toward the north at angles approximating 5° . The tract contains about 425 acres of coal.

TRACT NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
Lot 4	4	5 N.	26 E.	39.33
Lots 1, 2, 3, and 4	5	5 N.	26 E.	156.92
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	5 N.	26 E.	40.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	5 N.	26 E.	80.00
Lots 1, 2, 3, 4, and 5	6	5 N.	26 E.	204.45
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	5 N.	26 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	5 N.	26 E.	40.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	1	5 N.	25 E.	40.00
Lot 1	1	5 N.	25 E.	39.96
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	6 N.	26 E.	40.00
S. $\frac{1}{2}$ of S. $\frac{1}{4}$	32	6 N.	26 E.	160.00
Total area.....				920.66
Occupied by railroad.....				5.08

Tract 2 contains the Hartshorne coal, which is separated from its outcrop by leased lands of the Choctaw, Oklahoma and Gulf Railroad Company. It is estimated that the coal in the southeast corner of the tract is at a depth of 600 to 700 feet, dipping toward the northeast at a low angle. The dip is considerably decreased toward the east, until the coal is at a depth of about 2,000 feet at the east end.

TRACT NO. 3.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	4	5 N.	26 E.	160.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	4	5 N.	26 E.	40.00
S. $\frac{1}{2}$	5	5 N.	26 E.	320.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	5 N.	26 E.	40.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	6	5 N.	26 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	7	5 N.	26 E.	40.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	8	5 N.	26 E.	160.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	9	5 N.	26 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	5 N.	26 E.	80.00
Total area				960.00

Tract 3 contains only the Hartshorne coal, which is separated from the outcrop by leased lands. In the southeast corner of the tract the coal is estimated to be at a depth of 800 feet. It dips toward the east at a low angle, decreasing to about 5° at the east end.

TRACT NO. 4.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	7	5 N.	26 E.	40.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	7	5 N.	26 E.	80.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	8	5 N.	26 E.	160.00
S. $\frac{1}{2}$	8	5 N.	26 E.	320.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	9	5 N.	26 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	9	5 N.	26 E.	80.00
SW. $\frac{1}{4}$	9	5 N.	26 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	5 N.	26 E.	80.00
Total area				960.00

Tract 4 contains the Hartshorne coal, which is separated from the outcrop by leased lands. In the southeast corner of the tract the coal is estimated to be at a depth of 300 feet. The dip of the coal in this tract is toward the east 5° to 10° .

TRACT NO. 5, PARCEL 1.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$	16	5 N.	26 E.	160.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	5 N.	26 E.	80.00
W. $\frac{1}{4}$	16	5 N.	26 E.	320.00
E. $\frac{1}{2}$	17	5 N.	26 E.	320.00
Total				880.00

Parcel No. 1 contains the Hartshorne coal which is separated from the outcrop by leased lands. The coal in the southeastern part of the tract is at a depth of 700 to 800 feet, dipping toward the east about 5°.

PARCEL 2.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	18	5 N.	26 E.	40.00
Total				40.00

Total area of tract 5 is 920 acres; occupied by railroad, 3.33 acres.

Parcel No. 2 contains the Hartshorne coal which crops out across it in a southeast-northwest direction, dipping toward the northeast. The tract contains about 20 acres of coal.

TRACT NO. 6.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	20	5 N.	26 E.	320.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	5 N.	26 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	21	5 N.	26 E.	40.00
W. $\frac{1}{4}$	21	5 N.	26 E.	320.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	5 N.	26 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	5 N.	26 E.	80.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	5 N.	26 E.	80.00
Total area.....				960.00

In this tract the coal is at a depth of 800 to 1,000 feet in the southeastern part, dipping toward the northeast at a very slight angle. This tract lies in the central part or axis of the Mitchell basin. In the southeastern part of the tract the coal dips toward the north.

TRACT NO. 7.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	5 N.	26 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	28	5 N.	26 E.	80.00
SW. $\frac{1}{4}$	28	5 N.	26 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	5 N.	26 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	5 N.	26 E.	80.00
S. $\frac{1}{2}$	29	5 N.	26 E.	320.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	29	5 N.	26 E.	80.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	5 N.	26 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	5 N.	26 E.	80.00
Total area				960.00
Occupied by railroad				21.39

Tract 7 contains the Hartshorne coal, which crops across the southern border, dipping slightly west of north 20° to 30° . The dip of the coal decreases toward the north until it becomes practically flat in the northwestern part near the axis of the Mitchell basin. The tract contains approximately 910 acres of coal.

TRACT NO. 8.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	23	5 N.	26 E.	40.00
W $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	5 N.	26 E.	80.00
NW. $\frac{1}{4}$	26	5 N.	26 E.	160.00
N. $\frac{1}{2}$	27	5 N.	26 E.	320.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	27	5 N.	26 E.	80.00
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	27	5 N.	26 E.	40.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	5 N.	26 E.	80.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	28	5 N.	26 E.	160.00
Total area				960.00
Occupied by railroad				8.11

This tract contains the Hartshorne coal, which crops across the southeastern border dipping north-northwest 30° to 40° . The dip decreases toward the north, reaching 15° to 20° at the northern border. The tract contains, approximately, 900 acres of coal.

TRACT NO. 9.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	23	5 N.	26 E.	40.00
S. $\frac{1}{2}$	24	5 N.	26 E.	320.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	5 N.	26 E.	80.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	5 N.	26 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	5 N.	27 E.	40.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	19	5 N.	27 E.	160.00
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	19	5 N.	27 E.	160.00
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	19	5 N.	27 E.	40.00
Total area				920.00
Occupied by railroad				3.10

This tract contains the Hartshorne coal, which occurs under practically the same conditions of structure as in tract 8. There are approximately 840 acres of coal in the tract.

TRACT NO. 10.

	Sec- tion.	Town- ship.	Range.	Acres.
Part of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	5 N.	27 E.	31.67
Part of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	5 N.	27 E.	33.11
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	5 N.	27 E.	40.00
S. $\frac{1}{2}$	16	5 N.	27 E.	320.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	5 N.	27 E.	80.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	5 N.	27 E.	40.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	20	5 N.	27 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	5 N.	27 E.	80.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	5 N.	27 E.	40.00
Total area				824.78

Tract 10 contains the Hartshorne coal, which occurs under practically the same conditions of structure as in tract 8. The area of coal in the tract is 770 acres, approximately.

TRACT NO. 11.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6 N.	24 E.	40.00
SE. $\frac{1}{4}$	30	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	6 N.	24 E.	80.00
Lots 3 and 4.....	30	6 N.	24 E.	77.67
NE. $\frac{1}{4}$	31	6 N.	24 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	31	6 N.	24 E.	80.00
Lots 1, 2, and 3.....	31	6 N.	24 E.	115.41
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	6 N.	24 E.	80.00
Total area.....				953.08
Occupied by railroads.....				34.33

Tract 11 contains both the Hartshorne and McAlester coals. The outcrop of the former is very near the extreme southern border, while that of the latter is very near the south side of section 30. The dip of the Hartshorne coal at the crop is 40 to 45°, while that of the McAlester is about 30° toward the north. The area of the Hartshorne coal is approximately 920 acres, while the McAlester is about 660 acres. A small acreage of Hartshorne coal has been removed from the southeast corner of this tract. Work was abandoned here in 1890.

TRACT NO. 12.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	6 N.	24 E.	80.00
SE. $\frac{1}{4}$	29	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	6 N.	24 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6 N.	24 E.	40.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	29	6 N.	24 E.	40.00
NE. $\frac{1}{4}$	32	6 N.	24 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	6 N.	24 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	6 N.	24 E.	80.00
Total area.....				960.00
Occupied by railroads.....				36.85

This tract contains both the Hartshorne and McAlester coals, occurring under the same structural conditions as found in tract 11. The former crops out at the southern border, while the latter is found very near the south side of section 29. The area of the Hartshorne coal is about 920 acres, and that of the McAlester about 420 acres.

TRACT NO. 13.

	Section.	Township.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	28	6 N.	24 E.	80.00
SE. $\frac{1}{4}$	28	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	6 N.	24 E.	80.00
NE. $\frac{1}{4}$	33	6 N.	24 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	33	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	6 N.	24 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	6 N.	24 E.	80.00
Total area.....				960.00
Occupied by railroads.....				33.58

This tract contains both the Hartshorne and McAlester coals, occurring under practically the same conditions of structure as found in tracts 11 and 12. The outcrop of the Hartshorne coal is at the extreme southern border and the tract is underlain entirely by this coal. The area of the McAlester coal is about 400 acres.

TRACT NO. 14.

	Section.	Township.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	27	6 N.	24 E.	80.00
SE. $\frac{1}{4}$	27	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	27	6 N.	24 E.	80.00
NE. $\frac{1}{4}$	34	6 N.	24 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	6 N.	24 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	35	6 N.	24 E.	80.00
Total area.....				960.00
Occupied by railroad.....				18.38

The above tract contains both the Hartshorne and McAlester coals, which occur under the same conditions of structure as in tract 13. The Hartshorne coal bed crops out very near the southern border. The area of the McAlester coal is about 320 acres.

TRACT NO. 15.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	6 N.	24 E.	80.00
SE. $\frac{1}{4}$	26	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	26	6 N.	24 E.	80.00
NE. $\frac{1}{4}$	35	6 N.	24 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	35	6 N.	24 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	36	6 N.	24 E.	80.00
Total area				960.00
Occupied by railroads				20.86

This tract contains both the Hartshorne and McAlester coals occurring under the same structural conditions as found in tracts 13 and 14. The area of the McAlester coal is approximately 280 acres.

TRACT NO. 16.

	Sec- tion.	Town- ship.	Range.	Acres.
LANDS OUTSIDE OF WISTER TOWN SITE.				
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	6 N.	24 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6 N.	24 E.	20.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6 N.	24 E.	10.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	24 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	24 E.	20.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	24 E.	5.00
E. $\frac{1}{2}$	36	6 N.	24 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	6 N.	24 E.	160.00
Lot 4	30	6 N.	25 E.	36.60
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	6 N.	25 E.	40.00
Lots 1, 2, 3, and 4	31	6 N.	25 E.	146.64
Total				918.24

TRACT NO. 16—Continued.

	Sec- tion.	Town- ship.	Rangc.	Acres.
LANDS WITHIN WISTER TOWN SITE. ^a				
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6 N.	24 E.	10.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	24 E.	10.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	24 E.	5.00
Total				25.00
Total area				943.24
Occupied by railroads				12.94

^aOnly the deposits of coal or asphalt in or under the land will be sold.

Tract 16 contains both the Hartshorne and McAlester coals, the former outcropping very near the southern border and dipping toward the north at about 20°. The dip decreases slightly toward the north, finally reaching about 15°. The area of the Hartshorne coal is about 800 acres, and of the McAlester about 250 acres.

TRACT NO. 17.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6 N.	25 E.	80.00
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	6 N.	25 E.	80.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6 N.	25 E.	40.00
E. $\frac{1}{2}$	31	6 N.	25 E.	320.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	6 N.	25 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	31	6 N.	25 E.	80.00
W. $\frac{1}{2}$	32	6 N.	25 E.	320.00
Total area				960.00
Occupied by railroad				16.28

The above tract contains only Hartshorne coal, which outcrops very near the southern border, dipping toward the north about 20°. As in tract 16, the dip decreases toward the north. The tract contains about 900 acres of coal.

TRACT NO. 18.

	Sec- tion.	Town- ship.	Range.	Acres.
Lot 4	4	5 N.	25 E.	40.29
SW. $\frac{1}{4}$	28	6 N.	25 E.	160.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	28	6 N.	25 E.	40.00
SE. $\frac{1}{4}$	29	6 N.	25 E.	160.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6 N.	25 E.	40.00
E. $\frac{1}{2}$	32	6 N.	25 E.	320.00
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	33	6 N.	25 E.	160.00
Total area				920.29
Occupied by railroad				10.09

Tract 18 contains only Hartshorne coal, which occurs under practically the same structural conditions as found in tract 17. The area of coal in the tract is about 890 acres.

TRACT NO. 19.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$	27	6 N.	25 E.	320
S. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	6 N.	25 E.	80
SE. $\frac{1}{4}$	28	6 N.	25 E.	160
NE. $\frac{1}{4}$	33	6 N.	25 E.	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	6 N.	25 E.	80
NW. $\frac{1}{4}$	34	6 N.	25 E.	160
Total area				960

This tract contains the Hartshorne coal, which is separated from the crop by leased lands. It is estimated that the coal is at a depth of 800 to 1,000 feet in the southwestern part of the tract, where the dip is about 10° . The dips decrease gradually northward and change in direction from north in the southern part to north-northwest near the northern boundary.

TRACT NO. 20.

	Section.	Township.	Range.	Acres.
LANDS OUTSIDE OF HOWE TOWN SITE.				
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	23	6 N.	25 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	26	6 N.	25 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	6 N.	25 E.	40.00
SW. $\frac{1}{4}$	26	6 N.	25 E.	160.00
E. $\frac{1}{2}$	27	6 N.	25 E.	320.00
NE. $\frac{1}{4}$	34	6 N.	25 E.	160.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	6 N.	26 E.	20.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	6 N.	25 E.	10.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	6 N.	25 E.	40.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	6 N.	25 E.	20.00
				890.00
LANDS WITHIN HOWE TOWN SITE. ^a				
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	6 N.	25 E.	10.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	6 N.	25 E.	40.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	6 N.	25 E.	20.00
				70.00
Total area				960.00
Occupied by railroad				.92

^aOnly the deposits of coal or asphalt in or under the land will be sold.

Tract 20 contains the Hartshorne coal, which occurs under conditions essentially the same as in tract 19.

TRACT NO. 21.

	Section.	Township.	Range.	Acres.
SE. $\frac{1}{4}$	23	6 N.	25 E.	160.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	23	6 N.	25 E.	40.00
SW. $\frac{1}{4}$	24	6 N.	25 E.	160.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	6 N.	25 E.	40.00
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6 N.	25 E.	40.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	6 N.	25 E.	80.00
NW. $\frac{1}{4}$	25	6 N.	25 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	6 N.	25 E.	80.00
NE. $\frac{1}{4}$	26	6 N.	25 E.	160.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	6 N.	25 E.	40.00
Total area				960.00
Occupied by railroads				24.23

This tract contains the Hartshorne coal, which is entirely beneath the surface, and in the southern part is estimated to be at a depth of 800 feet, dipping at a low angle toward the northwest.

TRACT NO. 22.

	Sec- tion.	Town- ship.	Range.	Acres.
LANDS OUTSIDE OF HOWE TOWN SITE.				
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6 N.	25 E.	40.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	25 E.	40.00
Part of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	25 E.	37.94
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	6 N.	25 E.	40.00
Part of SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	6 N.	25 E.	25.73
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	10.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	20.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	5.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	10.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	20.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	6 N.	25 E.	80.00
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	36	6 N.	25 E.	160.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	6 N.	25 E.	160.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	36	6 N.	25 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	6 N.	25 E.	40.00
Part of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	6 N.	25 E.	32.29
				<u>800.96</u>
LANDS WITHIN HOWE TOWN SITE.^a				
Part of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	6 N.	25 E.	2.06
Part of SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	6 N.	25 E.	14.27
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	20.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	10.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	5.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	40.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6 N.	25 E.	20.00
Part of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	6 N.	25 E.	7.71
				<u>119.04</u>
Total area				920.00
Occupied by railroads				29.90
Occupied by cemetery ^a				5.00

^a Only the deposits of coal or asphalt in or under the land will be sold.

Tract 22 contains the Hartshorne coal which lies at a depth of about 700 feet beneath the southeast corner. This tract lies nearly upon the axis of the low fold which extends northeastward from the vicinity of Howe, known as the Howe anticlinal fold. In the central part the dip is low toward the northeast, while in the northern part it is toward the north-northwest.

TRACT NO. 23.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	24	6 N.	25 E.	320. 00
NE. $\frac{1}{4}$	25	6 N.	25 E.	160. 00
Lot 4	18	6 N.	26 E.	43. 34
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	6 N.	26 E.	80. 00
Lots 1, 2, 3, and 4	19	6 N.	26 E.	173. 56
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	6 N.	26 E.	80. 00
Lots 1 and 2	30	6 N.	26 E.	86. 86
Total area				943. 76
Occupied by railroad				11. 38

This tract contains the Hartshorne coal, which is estimated to be at a depth of 800 feet beneath the southern part, dipping at a low angle toward the northwest.

TRACT NO. 24.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	6 N.	25 E.	80. 00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	36	6 N.	25 E.	160. 00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	6 N.	26 E.	40. 00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	6 N.	26 E.	80. 00
Lots 3 and 4	30	6 N.	26 E.	86. 98
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	31	6 N.	26 E.	160. 00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	6 N.	26 E.	160. 00
Lots 1, 2, 3, and 4	31	6 N.	26 E.	173. 08
Total area				940. 06
Occupied by railroad				. 01

This tract lies in the axial part of the Howe fold and contains the Hartshorne coal, which in the eastern part dips toward the east and in the northwestern part toward the northwest at low angles. The coal in the tract is estimated to be at a depth of 800 to 1,000 feet, being nearest the surface in the southeast corner.

TRACT NO. 25.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	6 N.	26 E.	80.00
SE. $\frac{1}{4}$	18	6 N.	26 E.	160.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	6 N.	26 E.	40.00
E. $\frac{1}{2}$	19	6 N.	26 E.	320.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	6 N.	26 E.	80.00
SW. $\frac{1}{4}$	20	6 N.	26 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	6 N.	26 E.	80.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	6 N.	26 E.	40.00
Total area				960.00
Occupied by railroad				12.19

Tract 25 contains the Hartshorne coal, dipping toward the northwest. It is at a depth of 800 to 1,000 feet in the southeast corner. Tract 25 lies upon the northwest side of the Howe anticlinal fold, its southeast corner being nearly upon the axis, where the coal is practically flat, dipping slightly toward the northeast. In the northern part the dip is toward the northwest about 3° .

TRACT NO. 26.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$	29	6 N.	26 E.	320.00
NE. $\frac{1}{4}$	30	6 N.	26 E.	160.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	6 N.	26 E.	80.00
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	6 N.	26 E.	40.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	6 N.	26 E.	80.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	6 N.	26 E.	40.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	6 N.	26 E.	80.00
NW. $\frac{1}{4}$	32	6 N.	26 E.	160.00
Total area				960.00
Occupied by railroad				1.30

This tract lies upon the southeastern side of the Howe anticlinal fold, the northwestern part being nearly upon the axis where the coal pitches slightly toward the northeast. The coal in the northern part is estimated to be at a depth of 700 to 800 feet.

TRACT NO. 27.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	16	6 N.	26 E.	160.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	6 N.	26 E.	40.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	6 N.	26 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	17	6 N.	26 E.	80.00
SE. $\frac{1}{4}$	17	6 N.	26 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	6 N.	26 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	6 N.	26 E.	40.00
NE. $\frac{1}{4}$	20	6 N.	26 E.	160.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	6 N.	26 E.	40.00
NW. $\frac{1}{4}$	21	6 N.	26 E.	160.00
Total area				960.00
Occupied by railroad				13.43

This tract lies upon the northwest side of the Howe anticlinal fold, the southeastern corner being nearly upon the center or axis of the fold where the coal is estimated to be 800 to 1,000 feet beneath the surface and lying nearly flat. In the northern part of the tract the dip is toward the northwest about 3° .

TRACT NO. 28.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	20	6 N.	26 E.	160.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	6 N.	26 E.	80.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	6 N.	26 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	28	6 N.	26 E.	40.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	6 N.	26 E.	40.00
E. $\frac{1}{2}$	29	6 N.	26 E.	320.00
NE. $\frac{1}{4}$	32	6 N.	26 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6 N.	26 E.	80.00
Total area				960.00
Occupied by railroad				1.67

The above tract lies upon the southwestern side of the fold, the northwestern corner being nearly upon the axis. The coal dips toward the southeast from nearly a flat position in the northwestern part to about 5° in the southwestern.

TRACT NO. 29.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	9	6 N.	26 E.	40.00
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	9	6 N.	26 E.	80.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	6 N.	26 E.	40.00
SW. $\frac{1}{4}$	10	6 N.	26 E.	160.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	15	6 N.	26 E.	160.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	6 N.	26 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	6 N.	26 E.	80.00
NE. $\frac{1}{4}$	16	6 N.	26 E.	160.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	6 N.	26 E.	40.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	6 N.	26 E.	80.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	16	6 N.	26 E.	80.00
Total area.....				960.00
Occupied by railroad.....				11.69

This tract lies upon the north side of the Howe anticlinal fold, the southeastern corner being nearly upon the center or axis, where the coal is practically flat. In the northern part the dip is low toward the north. The coal is at a depth of probably 800 feet near the railroad.

TRACT NO. 30.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	6 N.	26 E.	40.00
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	6 N.	26 E.	80.00
E. $\frac{1}{2}$	21	6 N.	26 E.	320.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	6 N.	26 E.	80.00
W. $\frac{1}{2}$	22	6 N.	26 E.	320.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	28	6 N.	26 E.	80.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	28	6 N.	26 E.	40.00
Total area.....				960.00
Occupied by railroad.....				1.77

This tract lies upon the southern side of the Howe anticlinal fold. The Hartshorne coal is at a depth of about 800 feet beneath the northwest corner, where it is practically flat. In the southern part the dip is south at about 5°.

TRACT NO. 31.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	10	6 N.	26 E.	160.00
S. $\frac{1}{2}$	11	6 N.	26 E.	320.00
N. $\frac{1}{2}$	14	6 N.	26 E.	320.00
NE. $\frac{1}{4}$	15	6 N.	26 E.	160.00
Total area				960.00
Occupied by railroad				18.30

This tract lies upon the north side of the Howe anticlinal fold, the Hartshorne coal being at a depth of approximately 800 feet beneath the southern end, where it lies practically flat. In the north side of the tract the coal bed dips toward the north 3° to 5° .

TRACT NO. 32.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	14	6 N.	26 E.	160
SE. $\frac{1}{4}$	15	6 N.	26 E.	160
E. $\frac{1}{2}$	22	6 N.	26 E.	320
W. $\frac{1}{2}$	23	6 N.	26 E.	320
Total area				960

This tract lies upon the south side of the fold, the coal being at a depth of 800 to 1,000 feet beneath the northern part upon the axis of the fold. In the southern part of the tract the dip is toward the south at about 5° .

TRACT NO. 33.

	Sec- tion.	Town- ship.	Range.	Acres.
LANDS OUTSIDE OF MONROE TOWN SITE.				
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	20.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	10.00
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	80.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	20.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	10.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
SE. $\frac{1}{4}$	14	6 N.	26 E.	160.00
E. $\frac{1}{2}$	23	6 N.	26 E.	320.00
W. $\frac{1}{2}$	24	6 N.	26 E.	320.00
				945.00

TRACT NO. 33—Continued.

	Sec- tion.	Town- ship.	Range.	Acres.
LANDS WITHIN MONROE TOWN SITE. ^a				
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
				15.00
Total area.....				960.00
Occupied by railroad.....				1.76

^a Only the deposits of coal or asphalt in or under the land will be sold.

Tract 33 lies upon the south side of the Howe anticlinal fold, the coal being at a depth of 800 to 1,000 feet beneath the northern part upon the axis of the fold. In the southern part of the tract the dip is toward the south at about 5°.

TRACT NO. 34.

	Sec- tion.	Town- ship.	Range.	Acres.
LANDS OUTSIDE OF MONROE TOWN SITE..				
S. $\frac{1}{2}$	12	6 N.	26 E.	320.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
NE. $\frac{1}{4}$	13	6 N.	26 E.	160.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
N. $\frac{1}{2}$ of NW. of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
W. $\frac{1}{2}$ of E. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	10.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	20.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
SW. $\frac{1}{4}$	7	6 N.	27 E.	160.00
NW. $\frac{1}{4}$	18	6 N.	27 E.	160.00
				935.00

TRACT NO. 34—Continued.

	Section.	Township.	Range.	Acres.
LANDS WITHIN MONROE TOWN SITE. ^a				
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
N. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
S. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	2.50
E. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	13	6 N.	26 E.	5.00
				25.00
Total area.....				960.00
Occupied by railroad.....				28.60

^a Only the deposits of coal or asphalt in or under the land will be sold.

Tract 34 contains the Hartshorne coal and lies upon the north side of the Howe anticlinal fold. The coal is at a depth of 800 to 1,000 feet beneath the south side, where it lies practically flat. In the north side of the tract the coal dips toward the north 3° to 5° .

TRACT NO. 35.

	Section.	Township.	Range.	Acres.
SE. $\frac{1}{4}$	13	6 N.	26 E.	160.00
E. $\frac{1}{4}$	24	6 N.	26 E.	320.00
SW. $\frac{1}{4}$	18	6 N.	27 E.	160.00
W. $\frac{1}{4}$	19	6 N.	27 E.	320.00
Total area.....				960.00
Occupied by railroad.....				4.71

This tract lies upon the south side of the fold, the coal being at a depth of 800 to 1,000 feet beneath the northern part upon the axis of the fold. In the southern part of the tract the dip is toward the south about 5° .

TRACT NO. 36.

	Section.	Township.	Range.	Acres.
SE. $\frac{1}{4}$	7	6 N.	27 E.	160.00
S. $\frac{1}{4}$	8	6 N.	27 E.	320.00
N. $\frac{1}{4}$	17	6 N.	27 E.	320.00
NE. $\frac{1}{4}$	18	6 N.	27 E.	160.00
Total area				960.00
Occupied by railroad				6.99

Tract 36 contains the Hartshorne coal and lies upon the north side of the Howe anticlinal fold, the coal being at a depth of 800 to 1,000 feet beneath the south side, where it lies practically flat. In the north side of the tract the coal dips toward the north 3° to 5° .

TRACT NO. 37.

	Section.	Township.	Range.	Acres.
SW. $\frac{1}{4}$	17	6 N.	27 E.	160.00
SE. $\frac{1}{4}$	18	6 N.	27 E.	160.00
E. $\frac{1}{2}$	19	6 N.	27 E.	320.00
W. $\frac{1}{2}$	20	6 N.	27 E.	320.00
Total area				960.00
Occupied by railroad				9.82

This tract lies upon the south side of the fold, the coal being at a depth of 800 to 1,000 feet beneath the northern part upon the axis of the fold. In the southern part of the tract the dip is toward the south at about 5° .

TRACT NO. 38.

	Section.	Township.	Range.	Acres.
S. $\frac{1}{2}$	9	6 N.	27 E.	320.00
Part of E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	6 N.	27 E.	47.60
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	6 N.	27 E.	80.00
Part of NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	6 N.	27 E.	22.06
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	6 N.	27 E.	40.00
N. $\frac{1}{2}$	16	6 N.	27 E.	320.00
Total area				829.66
Occupied by railroad				17.20

Tract 38 contains the Hartshorne coal and lies upon the north side of the Howe anticlinal fold, the coal being at a depth of 800 to 1,000 feet beneath the south side where it lies practically flat. In the north side of the tract the coal dips toward the north 3° to 5° .

TRACT NO. 39.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	16	6 N.	27 E.	160.00
SE. $\frac{1}{4}$	17	6 N.	27 E.	160.00
E. $\frac{1}{4}$	20	6 N.	27 E.	320.00
W. $\frac{1}{4}$	21	6 N.	27 E.	320.00
Total area.....				960.00
Occupied by railroad				1.54

This tract lies upon the south side of the Howe fold, the coal being at a depth of 800 to 1,000 feet beneath the northern part upon the axis of the fold. In the southern part of the tract the dip is toward the south at about 5° .

TRACT NO. 40.

	Sec- tion.	Town- ship.	Range.	Acres.
Part of SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	6 N.	27 E.	20.96
Part of W. $\frac{1}{4}$ of E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	15	6 N.	27 E.	38.66
W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	6 N.	27 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	6 N.	27 E.	40.00
SE. $\frac{1}{4}$	16	6 N.	27 E.	160.00
E. $\frac{1}{4}$	21	6 N.	27 E.	320.00
Part of W. $\frac{1}{4}$ of E. $\frac{1}{2}$ of W. $\frac{1}{4}$	22	6 N.	27 E.	64.68
W. $\frac{1}{4}$ of W. $\frac{1}{4}$	22	6 N.	27 E.	160.00
Total area.....				884.30

This tract contains the Hartshorne coal and lies upon the south side of the Howe anticline, the coal being at a depth of 800 to 1,000 feet beneath the northern part upon the axis. In the southern part of the tract the dip is toward the south about 5° .

Total area unleased segregated coal lands, Howe division, 37,359.83 acres.

DESCRIPTION OF TRACTS.

POTEAU DIVISION CORRESPONDING TO POTEAU MAP SHEET.

TRACT NO. 41.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	6 N.	24 E.	40.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	6 N.	24 E.	40.00
Lot 4	18	6 N.	24 E.	39.56
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	19	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	19	6 N.	24 E.	160.00
Lots 1, 2, 3, and 4	19	6 N.	24 E.	157.00
NE. $\frac{1}{4}$	30	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	6 N.	24 E.	80.00
Lots 1 and 2	30	6 N.	24 E.	77.81
Total area				954.37
Occupied by railroad				2.65

This tract contains the Cavanal coal, which crops out near the southern end, dipping toward the north about 10° . The dip of the coal will vary slightly throughout the tract. The coal at the northern border of the tract is at a depth, approximately, of 1,200 feet. There are about 870 acres of coal in the tract. The McAlester coals are between 800 and 1,000 feet in depth in the southeast corner of the tract. They dip toward the north conforming in structure with the Cavanal coal.

TRACT NO. 42.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	6 N.	24 E.	80.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	6 N.	24 E.	80.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	20	6 N.	24 E.	160.00
W. $\frac{1}{2}$	20	6 N.	24 E.	320.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	29	6 N.	24 E.	40.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	29	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	29	6 N.	24 E.	80.00
Total area				960.00
Occupied by railroad				3.07

The above tract contains the Cavanal coal which crops out near the southern end, dipping toward the north about 10° . The dip of the coal will vary but slightly throughout the tract. The coal at the northern border of the tract is at a depth of approximately 1,200 feet. The tract contains about 910 acres of coal.

TRACT NO. 43.

	Sec. tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	16	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	6 N.	24 E.	80.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	20	6 N.	24 E.	160.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	21	6 N.	24 E.	80.00
W. $\frac{1}{4}$	21	6 N.	24 E.	320.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	6 N.	24 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	29	6 N.	24 E.	40.00
Total area.....				960.00
Occupied by railroad.....				1.80

Tract 43 contains only the Cavanal coal, which crops out near the southern end, dipping toward the north about 10° . The dip of the coal varies slightly throughout the tract. The coal at the northern border is at a depth of, approximately, 1,200 feet. The tract contains 930 acres of coal.

TRACT NO. 44.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	6 N.	24 E.	40.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	15	6 N.	24 E.	80.00
SE. $\frac{1}{4}$	16	6 N.	24 E.	160.00
NE. $\frac{1}{4}$	21	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	21	6 N.	24 E.	80.00
W. $\frac{1}{2}$	22	6 N.	24 E.	320.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	27	6 N.	24 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	6 N.	24 E.	40.00
Total area.....				960.00
Occupied by railroad.....				9.30

Tract 44 contains the Cavanal coal, which crops out near the southern end, dipping toward the north about 10° . The dip of the coal varies slightly throughout the tract. The coal at the northern border

is at a depth of approximately 1,200 feet. The tract contains approximately 870 acres of coal.

TRACT NO. 45.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	14	6 N.	24 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	14	6 N.	24 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	15	6 N.	24 E.	80.00
SE. $\frac{1}{4}$	15	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	15	6 N.	24 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	6 N.	24 E.	40.00
E. $\frac{1}{2}$	22	6 N.	24 E.	320.00
W. $\frac{1}{2}$ of W. $\frac{1}{4}$	23	6 N.	24 E.	160.00
Total area.....				960.00
Occupied by railroad.....				1.78

Tract 45 contains the Cavanal coal, which crops out near the southern end, dipping toward the north at about 10° . The dip varies slightly throughout the tract. The coal at the northern border of the tract is at a depth of approximately 1,200 feet. The tract contains 955 acres of coal.

TRACT NO. 46.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	6 N.	24 E.	40.00
E. $\frac{1}{2}$	14	6 N.	24 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{4}$	14	6 N.	24 E.	160.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	14	6 N.	24 E.	40.00
NE. $\frac{1}{4}$	23	6 N.	24 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	23	6 N.	24 E.	80.00
E. $\frac{1}{2}$ of W. $\frac{1}{4}$	23	6 N.	24 E.	160.00
Total area.....				960.00

Tract 46 contains only Cavanal coal, which crops out across the extreme south end, dipping toward the north-northwest about 8° . The dip decreases slightly toward the north until the coal reaches a depth of about 1,000 feet in the northern end. The tract contains approximately 945 acres of coal.

TRACT NO. 47.

	Section.	Township.	Range.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	6 N.	24 E.	40.00
SW. $\frac{1}{4}$	12	6 N.	24 E.	160.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	6 N.	24 E.	80.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	13	6 N.	24 E.	40.00
W. $\frac{1}{2}$	13	6 N.	24 E.	320.00
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	24	6 N.	24 E.	80.00
N. $\frac{1}{4}$ of SW. $\frac{1}{4}$	24	6 N.	24 E.	80.00
NW. $\frac{1}{4}$	24	6 N.	24 E.	160.00
Total area				960.00

This tract contains Cavanal coal which crops out across the southern end, dipping toward the northwest 6° to 8° . The dip decreases slightly toward the north until the coal reaches a depth of about 1,000 feet in the northern end. There are about 930 acres of coal in the tract.

TRACT NO. 48.

	Section.	Township.	Range.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	12	6 N.	24 E.	80.00
SE. $\frac{1}{4}$	12	6 N.	24 E.	160.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	13	6 N.	24 E.	160.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	13	6 N.	24 E.	40.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	24	6 N.	24 E.	80.00
Lot 4	7	6 N.	25 E.	36.57
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	18	6 N.	25 E.	160.00
Lots 1, 2, 3, and 4	18	6 N.	25 E.	146.12
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	19	6 N.	25 E.	40.00
Lot 1	19	6 N.	25 E.	36.51
Total area				939.20

Tract 48 contains the Cavanal coal, which outcrops across the southern end, dipping toward the northwest 6° to 8° . The dip decreases slightly toward the north until the coal reaches a depth of about 1,000 feet in the northern end. The tract contains about 900 acres of coal.

TRACT NO. 49.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	6 N.	24 E.	40.00
Lot 7	6	6 N.	25 E.	36.65
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	7	6 N.	25 E.	80.00
SE. $\frac{1}{4}$	7	6 N.	25 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	7	6 N.	25 E.	80.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	6 N.	25 E.	80.00
Lots 1, 2, and 3	7	6 N.	25 E.	109.87
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	17	6 N.	25 E.	80.00
NE. $\frac{1}{4}$	18	6 N.	25 E.	160.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	6 N.	25 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	6 N.	25 E.	80.00
Total area				946.52

This tract contains the Cavanal coal, which crops out across the southeast end, dipping toward the north about 6° . The coal reaches a depth of approximately 1,000 feet below the level of the outcrop in the northwest end. The tract contains about 900 acres of coal.

TRACT NO. 50.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	5	6 N.	25 E.	40.00
SE. $\frac{1}{4}$	6	6 N.	25 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	6 N.	25 E.	80.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	7	6 N.	25 E.	80.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	6 N.	25 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	6 N.	25 E.	80.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	6 N.	25 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	8	6 N.	25 E.	40.00
W. $\frac{1}{2}$	8	6 N.	25 E.	320.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	6 N.	25 E.	40.00
Total area				960.00

This tract contains the Cavanal coal which crops out across the southeastern end, dipping toward the northwest about 6° . The coal reaches a depth of approximately 1,000 feet below the level of the outcrop in the northwest end. There are about 925 acres of coal in the tract.

TRACT NO. 51.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	6 N.	25 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	6 N.	25 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	6 N.	25 E.	80.00
SE. $\frac{1}{4}$	5	6 N.	25 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	6 N.	25 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	5	6 N.	25 E.	40.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	6 N.	25 E.	80.00
Lots 3 and 4	5	6 N.	25 E.	82.20
Lots 1 and 2	6	6 N.	25 E.	81.73
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	6 N.	25 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	6 N.	25 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	6 N.	25 E.	80.00
Total area				923.93

This tract contains the Cavanal coal, which crops out across the southeast end, dipping toward the north about 6° . The coal reaches a depth of approximately 1,000 feet below the level of the outcrop in the northwest end. There are about 890 acres of coal in the tract.

TRACT NO. 52.

	Sec- tion.	Town- ship.	Range.	Acres.
Lot 4	3	6 N.	25 E.	41.60
Lots 1, 2, 3, and 4	4	6 N.	25 E.	165.28
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	4	6 N.	25 E.	160.00
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	6 N.	25 E.	40.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	6 N.	25 E.	40.00
Lots 1 and 2	5	6 N.	25 E.	81.96
SE. $\frac{1}{4}$	32	7 N.	25 E.	160.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	7 N.	25 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	7 N.	25 E.	40.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	7 N.	25 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	7 N.	25 E.	40.00
Total area				928.84

The above tract contains the Cavanal coal, which crops out across the southeast end, dipping toward the north about 6° . The coal reaches a depth of approximately 1,000 feet below the level of the outcrop in the northwest end. The tract contains about 900 acres of coal.

TRACT NO. 53.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	9	7 N.	24 E.	40.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	16	7 N.	24 E.	80.00
Total area				120.00

This tract contains the Witteville coal. It crops across the northwest corner, dipping toward the southeast about 9° . There are about 110 acres of coal in the tract.

TRACT NO. 54.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	14	7 N.	24 E.	160.00
S. $\frac{1}{2}$	15	7 N.	24 E.	320.00
NE. $\frac{1}{4}$	22	7 N.	24 E.	160.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	22	7 N.	24 E.	40.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	22	7 N.	24 E.	40.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	23	7 N.	24 E.	80.00
NW. $\frac{1}{4}$	23	7 N.	24 E.	160.00
Total area				960.00

The above tract contains the Witteville coal, which is separated from the outcrop by leased lands. The coal is at a depth of about 700 to 800 feet on the north side, and dips toward the southeast at a low angle.

TRACT NO. 55.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	13	7 N.	24 E.	320.00
SE. $\frac{1}{4}$	14	7 N.	24 E.	160.00
NE. $\frac{1}{4}$	23	7 N.	24 E.	160.00
N. $\frac{1}{2}$	24	7 N.	24 E.	320.00
Total area				960.00

This tract contains the Witteville coal, which is separated from the outcrop by leased lands. The coal is at a depth of about 800 feet in the northwest corner of the tract and dips toward the southeast at a low angle.

TRACT NO. 56.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	23	7 N.	24 E.	160.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	23	7 N.	24 E.	80.00
S. $\frac{1}{2}$	24	7 N.	24 E.	320.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	25	7 N.	24 E.	160.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	7 N.	24 E.	80.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	7 N.	24 E.	40.00
Lots 3 and 4	19	7 N.	25 E.	76.78
Lot 1	30	7 N.	25 E.	38.16
Total area				954.94

Tract 16 contains the Witteville coal. This tract lies near the center of the Cavanal basin and the coal is practically flat. The dip in the north side is slightly toward the south. In the SE. $\frac{1}{4}$ of section 23 of this tract the coal is at a depth of 800 to 1,000 feet.

TRACT NO. 57.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	25	7 N.	24 E.	160.00
S. $\frac{1}{2}$	25	7 N.	24 E.	320.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	7 N.	24 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	7 N.	24 E.	80.00
NE. $\frac{1}{4}$	36	7 N.	24 E.	160.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	36	7 N.	24 E.	40.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	7 N.	24 E.	40.00
Lot 2	30	7 N.	25 E.	37.71
Total area				877.71

This tract contains the Witteville coal, which lies at a depth of but a few hundred feet in the southeastern part. In this part of the tract the dip is low toward the northwest, becoming nearly flat in the northern part near the center of the Cavanal basin.

TRACT NO. 58.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	7	7 N.	25 E.	40.00
SE. $\frac{1}{4}$	7	7 N.	25 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	7	7 N.	25 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	7	7 N.	25 E.	40.00
Lots 1, 2, 3, and 4	7	7 N.	25 E.	154.48
NE. $\frac{1}{4}$	18	7 N.	25 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	7 N.	25 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	7 N.	25 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	18	7 N.	25 E.	80.00
Lots 1, 2, and 3	18	7 N.	25 E.	116.42
Total area				950.90

The Witteville coal is accessible in this tract. It crops out across the north end, dipping toward the south beneath Cavanal Mountain at 6° to 8°.

TRACT NO. 59.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	7 N.	25 E.	80.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	7 N.	25 E.	40.00
Lot 4	18	7 N.	25 E.	38.50
E. $\frac{1}{2}$	19	7 N.	25 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	19	7 N.	25 E.	160.00
Lots 1 and 2	19	7 N.	25 E.	76.82
NE. $\frac{1}{4}$	30	7 N.	25 E.	160.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	7 N.	25 E.	80.00
Total area				955.32

This tract contains the Witteville coal. It lies across the axis of the Cavanal basin, where the coal is almost flat. The coal in the southern part is at a depth of 600 to 800 feet, where the dip is low toward the north.

TRACT NO. 60.

	Section.	Township.	Range.	Acres.
SE. $\frac{1}{4}$	30	7 N.	25 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	7 N.	25 E.	80.00
Lots 3 and 4	30	7 N.	25 E.	74.09
E. $\frac{1}{2}$	31	7 N.	25 E.	320.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	7 N.	25 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	31	7 N.	25 E.	80.00
Lots 1, 2, and 3	31	7 N.	25 E.	109.80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	7 N.	25 E.	40.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	7 N.	25 E.	40.00
Total area				943.89

Tract 60 contains Witteville coal, which crops out across the southeastern part dipping toward the northwest at about 8° . The tract contains about 810 acres of coal.

TRACT NO. 61.

	Section.	Township.	Range.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	8	7 N.	25 E.	160.00
S. $\frac{1}{2}$	8	7 N.	25 E.	320.00
N. $\frac{1}{2}$	17	7 N.	25 E.	320.00
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	17	7 N.	25 E.	160.00
Total area				960.00

Tract 61 contains the Witteville coal, which crops across the extreme northern end, dipping toward the south about 10° . The dip gradually decreases toward the south, becoming nearly flat in the southeast corner near the center of Cavanal basin. There are about 950 acres of coal land in the tract.

TRACT NO. 62

	Section.	Township.	Range.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	17	7 N.	25 E.	160.00
All of	20	7 N.	25 E.	640.00
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	21	7 N.	25 E.	160.00
Total area				960.00

Tract 62 contains the Witteville coal. The tract lies across the top of Cavanal mountain. The coal can be mined successfully only from the adjoining tracts to the north and south. The tract lies across the axial part of Cavanal basin. The coal is apparently flat in the center toward which it dips at low angles from the north and south.

TRACT NO. 63.

	Sec- tion.	Town- ship.	Range.	Acres.
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	7 N.	25 E.	80.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	7 N.	25 E.	80.00
All of	29	7 N.	25 E.	640.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	7 N.	25 E.	40.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	7 N.	25 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	7 N.	25 E.	80.00
Total area				960.00

This tract contains the Witteville coal which crops out across the southeast side dipping toward the northwest 6° to 8° . The dip decreases toward the northwest, becoming nearly flat in the northwest corner in the central part of the basin. The tract contains about 830 acres of coal.

TRACT NO. 64.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	7 N.	25 E.	160.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	9	7 N.	25 E.	80.00
SW. $\frac{1}{4}$	9	7 N.	25 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	7 N.	25 E.	80.00
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	16	7 N.	25 E.	160.00
W. $\frac{1}{2}$	16	7 N.	25 E.	320.00
Total area				960.00

The above tract contains the Witteville coal which crops out in the northern end of the tract, dipping south about 10° . The dip decreases toward the south until the coal is practically flat in the south end beneath the crest of the mountain. The tract contains about 900 acres of coal.

TRACT NO. 65.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	21	7 N.	25 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	21	7 N.	25 E.	160.00
SW. $\frac{1}{4}$	22	7 N.	25 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	22	7 N.	25 E.	80.00
NE. $\frac{1}{4}$	28	7 N.	25 E.	160.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	7 N.	25 E.	80.00
Total area				960.00

The tract contains Witteville coal dipping toward the northwest about 8° . The dip decreases gradually toward the northwest, becoming nearly flat in the northwest corner near the center of Cavanal basin. There are about 785 acres of Witteville coal in this tract.

TRACT NO. 66, PARCEL NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	10	7 N.	25 E.	80.00

Parcel 1 of tract 66 contains the Witteville coal which crops out in the eastern part, dipping toward the west 6° to 8° . The tract contains about 40 acres of coal.

TRACT NO. 66, PARCEL NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	7 N.	25 E.	40.00
NW. $\frac{1}{4}$	14	7 N.	25 E.	160.00
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	14	7 N.	25 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	15	7 N.	25 E.	80.00
Total area				440.00

Total area of tract 66 is 520 acres.

Parcel 2 of tract 66 contains Cavanal coal, dipping toward the west about 7° . The outcrop of the coal could not be definitely traced because of the smooth surface of the land. The outcrop occurs near the east end, and whole area of the parcel is underlain by the Cavanal coal.

TRACT NO. 67.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	7 N.	25 E.	40.00
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	14	7 N.	25 E.	160.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	15	7 N.	25 E.	80.00
NE. $\frac{1}{4}$	22	7 N.	25 E.	160.00
N. $\frac{1}{2}$	23	7 N.	25 E.	320.00
NW. $\frac{1}{4}$	24	7 N.	25 E.	160.00
Total area				920.00

This tract contains the Cavanal coal, which crops across the east end, dipping toward the west 6° to 8° . The tract contains about 890 acres of coal.

TRACT NO. 68.

	Sec- tion.	Town- ship.	Range.	Acres.
LANDS OUTSIDE OF POTEAU TOWN SITE.				
SE. $\frac{1}{4}$	22	7 N.	25 E.	160.00
S. $\frac{1}{2}$	23	7 N.	25 E.	320.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	24	7 N.	25 E.	40.00
NE. $\frac{1}{4}$	26	7 N.	25 E.	160.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	7 N.	25 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	26	7 N.	25 E.	80.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	7 N.	25 E.	40.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	27	7 N.	25 E.	80.00
				920.00
LANDS WITHIN POTEAU TOWN SITE. ^a				
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	24	7 N.	25 E.	40.00
Total area				960.00

^a Only the deposits of coal or asphalt in or under the land will be sold.

Tract 68 contains the Cavanal coal which crops across the southeast side dipping toward the northwest about 6° . The dip changes slightly throughout the tract. There are about 860 acres of coal in tract 68.

TRACT NO. 69.

	Sec- tion.	Town- ship.	Range.	Acres.
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	7 N.	25 E.	40.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	7 N.	25 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	27	7 N.	25 E.	80.00
S. $\frac{1}{2}$ of N. $\frac{1}{4}$	27	7 N.	25 E.	160.00
S. $\frac{1}{2}$	27	7 N.	25 E.	320.00
SE. $\frac{1}{4}$	28	7 N.	25 E.	160.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	7 N.	25 E.	80.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	7 N.	25 E.	40.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	7 N.	25 E.	40.00
Total area				960.00

Tract 69 contains the Cavanal coal which crops across the southeast side dipping toward the northwest at about 6° . The dip decreases slightly toward the northwest. The tract contains about 920 acres of coal.

TRACT NO. 70.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	7 N.	25 E.	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	7 N.	25 E.	80
N. $\frac{1}{2}$	33	7 N.	25 E.	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	33	7 N.	25 E.	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	7 N.	25 E.	40
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	7 N.	25 E.	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	7 N.	25 E.	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	7 N.	25 E.	40
SW. $\frac{1}{4}$	34	7 N.	25 E.	160
Total area				960

Tract 70 contains the Cavanal coal which crops across the east end dipping toward the northwest at about 6° . The dip decreases slightly toward the northwest. The tract contains about 910 acres of coal.

	Acres.
Total area unleased segregated coal lands, Poteau division	27,255.62
Total area unleased segregated coal lands, Howe division	37,359.83
Total area unleased segregated coal lands, Howe-Poteau district ...	64,615.45

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., June 11, 1904.

Circular No. 3 of the coal and asphalt lands in Howe-Poteau district (No. 3), is respectfully returned to the Secretary of the Interior with recommendation that it be approved.

A. C. TONNER,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., June 22, 1904.

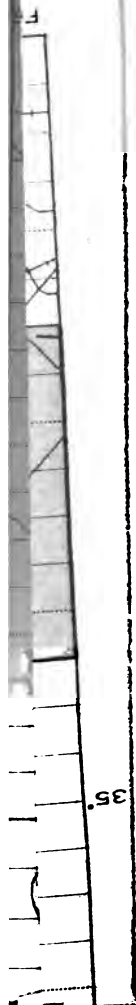
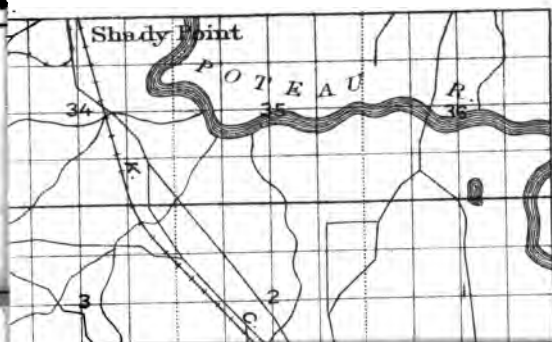
Approved.

E. A. HITCHCOCK,
Secretary.

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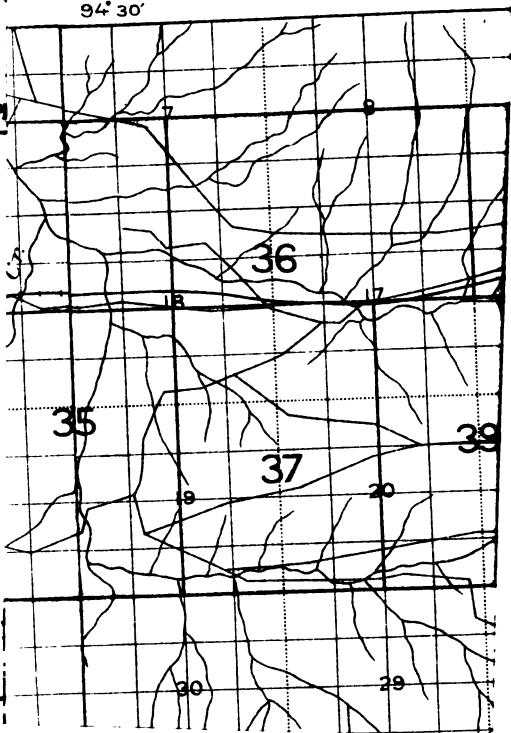
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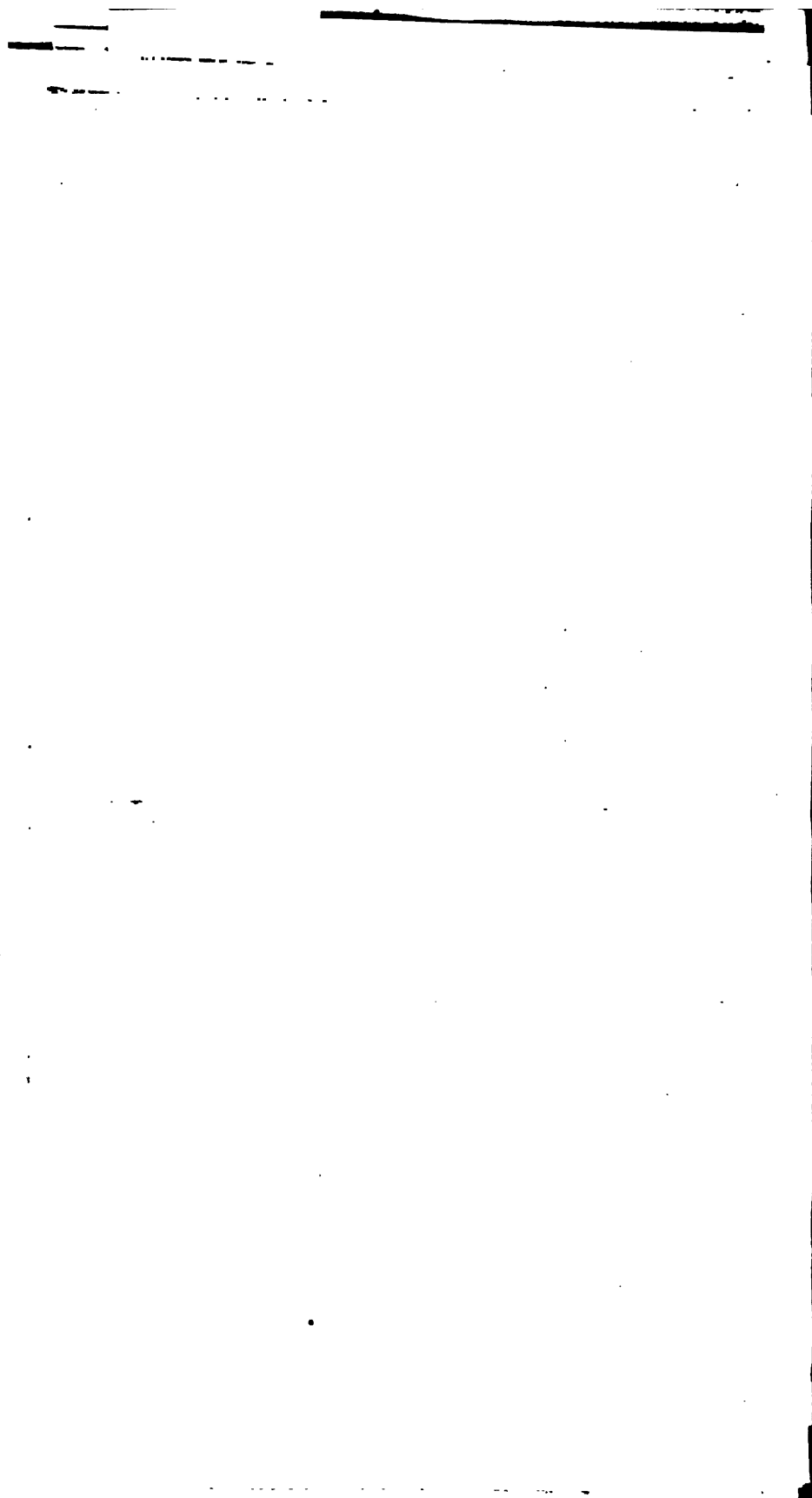




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DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 4.

MAPS OF SEGREGATED COAL LANDS

IN THE

McCURTAIN-MASSEY DISTRICT, CHOCTAW NATION,
INDIAN TERRITORY,

WITH

DESCRIPTION OF THE
UNLEASED SEGREGATED COAL LANDS.

BY

JOSEPH A. TAFF.

Bids for the purchase of tracts within this district will be opened by the Commissioner of Indian Affairs at his office in Washington, at 2 o'clock p. m. (eastern time), on Monday, April 3, 1905.

WASHINGTON:
GOVERNMENT PRINTING OFFICE,
1904.

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Tract No. 37	30
Tract No. 38	31
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Tract No. 52	37
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Tract No. 55	38
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Description of the unleased segregated coal lands, etc.—Continued.

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Description of tracts—Continued.

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ILLUSTRATIONS.

Map of McCurtain division, showing segregated coal lands and coal outcrops... At end

Map of Massey division, showing segregated coal lands and coal outcrops At end

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., June 17, 1904.

SIR: I have the honor to transmit herewith descriptive texts on the unleased segregated coal lands in the McCurtain-Massey district, Choctaw Nation, Ind. T., prepared by Mr. Joseph A. Taff in accordance with instructions contained in your letter of May 16, 1904. It is proposed that this report be published as Circular No. 4, for the information of those submitting bids in the fourth sale of unleased segregated coal lands.

Very respectfully,

CHAS. D. WALCOTT,
Director.

HON. E. A. HITCHCOCK,
Secretary of the Interior.

DESCRIPTION OF UNLEASED SEGREGATED COAL LANDS IN THE McCURTAIN-MASSEY DISTRICT, CHOCTAW NATION, INDIAN TERRITORY.

INTRODUCTORY REMARKS.

The McCurtain-Massey district contains two coal beds of known workable thickness—one in the eastern or McCurtain division, locally known as the Panama coal, and one in the Massey division, which is the same as the Witteville coal of the Howe-Poteau district. The Panama coal occurs in the same geological position, and is believed to be the same as the Hartshorne coal. The outcrops of the Hartshorne and Panama beds are separated by the downward folds or basins beneath the Cavanal and Sansbois mountains, through which the coal extends. The Panama coal was named for the village of Panama on the Kansas City Southern Railroad, where it was first developed on a commercial scale.

The crop line of the Witteville coal has been traced from the east end of Sansbois Mountain westward to the Missouri, Kansas and Texas Railroad. The coal bed has been prospected at a number of places along the course, but it is known to be workable only in the vicinity of Massey near the Fort Smith and Western Railroad, as shown on the Massey map sheet.

In the seasons of 1899, 1901, and 1903 the United States Geological Survey mapped the geology of the eastern and northern parts of the Choctaw coal field, paying special attention to the occurrence of the coal. In 1900 a report entitled, "The Geology of the Eastern Choctaw Coal Field," was published in Part II of the Twenty-first Annual Report of the Survey. This report gives an outline of the geology, and briefly describes the economic features of the coal. At the time of its publication that part of the field north and northeast of Sansbois Mountain had not been surveyed. On further advance of surveys in the northeastern part of the Choctaw Nation a summary of the geology of coal in Indian Territory, Arkansas, and Texas, entitled "The Southwestern Coal Field," was published in Part III of the Twenty-second Annual Report of the United States Geological Survey, 1902. In the surveys in connection with segregation of the coal lands the coal outcrops were retraversed and examined, and the geology of the coal completed north of Sansbois Mountain.

6

Revision of previous locations and the extensions or the projection of new lines of railroad is, according to law, under the jurisdiction of the United States courts of Indian Territory. Any changes of existing lines or the building of new railroads on the segregated coal lands since March, 1903, have no authentic record in the Department of the Interior further than maps showing the plan of the proposed changes or projections.

CONDITIONS GOVERNING THE CLASSIFICATION OF COAL BEDS.

In the selection of these lands for segregation and sale the following criteria were considered of essential importance:

1. The coal should be of a quality and hardness to create a demand for its use for commercial purposes.
2. It should be thick enough to be worked successfully.
3. Its structure or position and depth in the earth should assure profitable mining.

In the description of each tract only those coal beds are considered to which the above qualifications can be applied.

In some coal regions it is found that certain coal beds are variable in thickness or quality, or that both the thickness and quality are matters of uncertainty within short distances. It has been found that all beds of coal, as well as other rocks, are variable in thickness and composition within wide range.

The rocks in the McCurtain division of the district are folded in such a manner that the coal beds come to the surface or crop out in long stretches back and forth across the field, and the thickness and quality of the beds have been proved by prospecting or by mining throughout most of the surface occurrence. The folding of the strata also causes the coal to extend to depths reaching the limit of practical mining within a few miles at farthest from the outcrops of the beds. It is presumed that if a bed of coal has a known variability, both in structure and thickness, in various directions along outcrops through the district the same will be equally permanent within a few miles from the outcrop.

The coal in the Massey division of the district is located for sale in the vicinity of its known workable thickness.

DESCRIPTION OF UNLEASED SEGREGATED COAL LANDS IN THE MCCURTAIN DIVISION, CORRESPONDING TO THE MCCURTAIN MAP SHEET.

PANAMA COAL.

The Panama coal varies somewhat in thickness and in structure. Near the east end in the south side the coal is nearly 5 feet thick, but is divided into two benches by several inches of shale, while in the

north side near the east end it ranges between $3\frac{1}{2}$ and 4 feet and contains a thin parting of bony coal. At the Adkins mine, near the north side of sec. 21, T. 8 N., R. 26 E., the coal averages 4 feet, and without shaly impurities. Near the center of the district, at Panama, it varies but little above and below 4 feet in thickness and is clear of shaly impurities. Near the junction of the Kansas City Southern and Fort Smith and Western railroads prospects show the coal to be 3 feet 10 inches and of good quality. Farther west and near Milton it varies between 4 and 7 feet, but is divided into two benches by a variable parting of shale near the middle. In the vicinity of McCurtain, near the west end of the district, the coal varies from $3\frac{1}{2}$ to nearly 5 feet in thickness, and contains usually a thin parting of shale; near Ward, in the northeast side of the Spiro basin, is $4\frac{1}{2}$ feet thick, with a thin shale near the center. The coal north and northeast of Milton, in the north side of the Milton anticlinal fold, has been prospected at several places, but has not been developed. The roof of the coal is usually a hard, blue slaty shale and the floor a hard clay.

The quality of the coal probably varies slightly through the district, as does the Hartshorne coal in the Wilburton and Howe districts. The following analysis from the Panama mine, near the center of the district, represents probably an average quality:

Proximate analysis of Panama coal.

[From an average sample of run of mine at Panama.]

	Per cent.
Moisture.....	0.24
Volatile combustible matter.....	15.13
Fixed carbon	80.00
Ash	4.63
Sulphur	1.22
Phosphorus	.140

The Panama coal is reported to coke successfully, and its quality assures a coke of high grade.

STRUCTURE OF THE ROCKS.

The rocks, including the coal of the McCurtain-Massey district, have been crumpled into two upward or anticlinal folds. Between these folds is a wide, basin-like, downward fold or syncline, which pitches toward the northeast. The town of Spiro is in the axial part of this basin.

BACKBONE ANTIOLINE.

One of these anticlinal folds enters the district at the Arkansas-Indian Territory line, bears nearly west to the center, where it approaches the side of the second fold, turns toward the southwest, and pitches downward at a low inclination between Cavanal and

Sansbois mountains. This fold is known as the Backbone anticline, from a prominent ridge of this name which occupies it in the eastern part of the district. The Panama coal crops out in both the north and south sides of the axial or central part of this upward fold from the State line to the vicinity of Bokoshe. The coal at the outcrop in both sides varies between 10° and 25° , with an average of 15° . Away from the crop northward the coal decreases gradually in slope, becoming almost flat in the Spiro basin within a distance of 3 miles. Southward the coal changes in dip, also becoming flat in the wide basin beneath Cavanal Mountain.

MILTON ANTICLINE.

The second upward fold enters the district from the Arkansas River Valley near the center of the north side, bearing toward the southwest. This fold is known as the Milton anticline, from a town of this name located near its center. Opposite the west end of the Backbone anticline the Milton fold curves toward the west. The coal in this fold also pitches westward and the outcrop of the coal crosses the axial part near McCurtain.

In the vicinity of McCurtain the rocks in the central part of the Milton anticline are unusually disturbed. Local crumpling of the strata has occurred and the rocks including the coal bed have been fractured and displaced. A dome-like elevation has been formed and the coal crops out around it in a circular or elliptical form near the center of sec. 21, T. 8 N., R. 22 E. In the east end of this local fold the coal bed is so broken that it is of little or no value. In the north, south, and west sides, however, the coal seems to have its normal thickness and quality. In the north side of this local fold there is a fault which bears nearly north 75° east and south 75° west with the strike of the Milton anticline. This fault has displaced the rocks including the coal downward toward the south with respect to the same beds on the north side. The fault being in the strike of the rocks, it is difficult to trace and can not be found except where it intersects beds of hard rock which are exposed, or by prospecting or mining the coal.

As in the Backbone anticlinal, so here the coal crops in both sides of the center or axial part of the fold. At the outcrop of the coal the dips vary between 10° and 30° . From the vicinity of Bokoshe eastward the coal passes downward at a gradually decreasing slope into the Spiro basin. Westward from Bokoshe the coal dips southward and passes at a gradually decreasing slope beneath Sansbois mountain. Northward from the outcrop in the north side of the fold the coal slopes with decreasing dip and so continues beyond the bounds of the Choctaw Nation.

SPIRO SYNCLINE.

Between the Backbone and Milton anticlinal folds the Spiro syncline pitches toward the northeast. This fold has a basin-like form and the town of Spiro is near its center in this district. As the basin becomes broader it likewise becomes flatter, but on account of the pitch of the fold the coal passes to a depth beyond the reach of practicable mining within 1 to 3 miles from its outcrop.

**DESCRIPTION OF UNLEASED SEGREGATED COAL LANDS
IN THE MASSEY DIVISION, CORRESPONDING TO THE
MASSEY MAP SHEET.****JONES CREEK COAL.**

This division of the district is known to contain but a single bed of commercially valuable coal, which has been prospected and developed for local use on Jones Creek near the center of the mapped area. It occurs in nearly the position in the geological column as that occupied by the Witteville coal, but since the outcrops can not be traced from the locality of the Witteville coal their exact relations can not be determined. The Jones Creek and Witteville coals resemble each other very closely in structure, but the former is harder and cleaner. The coal is approximately 3 feet thick. At one prospect the face of the coal revealed two thin partings of bony coal. At another the section showed clean coal.

The physical appearance of this coal would indicate that the percentage of sulphur in the Jones Creek district is probably less than that of the Witteville, but it is believed that the ash is not less. Analyses of the Jones Creek coal have not been made. The coal has been prospected and mined for local use on the north side of the Sansbois Coal Company's lease; also farther west on the west side of sec. 23, T. 7 N., R. 16 E.

The coal bed has a hard shaly roof and clay floor.

The coal lies in a shallow downward fold or basin in the southeastern part and in a westerly pitching low anticlinal fold in the northwest part of the Massey division. The coal is inclined at low angles throughout the mapped area and is nearly flat in the central part of the basin above referred to. The coal in the center of this basin in the valley of Jones Creek, NW. $\frac{1}{4}$ of sec. 36, T. 7 N., R. 16 E., may be reached by a shaft at a depth of a few hundred feet.

DESCRIPTION OF TRACTS.

McCURTAIN DIVISION, CORRESPONDING TO McCURTAIN MAP SHEET.

TRACT NO 1.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	22	8 N.	21 E.	80
W. $\frac{1}{2}$ of W. $\frac{1}{4}$	26	8 N.	21 E.	160
E. $\frac{1}{2}$	27	8 N.	21 E.	320
E. $\frac{1}{2}$ of W. $\frac{1}{4}$	27	8 N.	21 E.	160
W. $\frac{1}{2}$ of S. W. $\frac{1}{4}$	27	8 N.	21 E.	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	27	8 N.	21 E.	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	28	8 N.	21 E.	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	8 N.	21 E.	40
Total area.....				960

The coal in this tract is entirely beneath the surface. In the southeast corner it is at an estimated depth of 900 feet and nearly flat, being nearly upon the axis of the Milton anticlinal fold. Toward the northwest the dip increases to about 5° . In the northwestern part of the tract the coal is at an estimated depth of 1,200 feet.

TRACT NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	33	8 N.	21 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	33	8 N.	21 E.	160.00
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	34	8 N.	21 E.	160.00
W. $\frac{1}{2}$	34	8 N.	21 E.	320.00
Total area.....				960.00
Occupied by railroad.....				7.64

This tract lies across the anticlinal fold which pitches toward the southwest. In the southern part the dip is southwesterly, while in the northwestern part it dips toward the northwest at low angles. In the eastern part near the railroad the coal is estimated to be 800 feet beneath the surface. In the northwest corner it is probably 1,200 feet in depth.

TRACT NO. 3.

	Section.	Township.	Range.	Acres.
W. $\frac{1}{2}$ of E $\frac{1}{2}$	25	8 N.	21 E.	160.00
W. $\frac{1}{2}$	25	8 N.	21 E.	320.00
E. $\frac{1}{2}$	26	8 N.	21 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	26	8 N.	21 E.	160.00
Total area				960.00
Occupied by railroad				14.50

The southeast corner of the above tract extends across the anticlinal which pitches toward the southwest. In the southern part the coal is nearly flat, pitching southwest, while in the northwestern part it dips toward the northwest at low angles. In the southeastern part near the railroad the coal is estimated to be 800 feet beneath the surface.

TRACT NO. 4.

	Section.	Township.	Range.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	34	8 N.	21 E.	160.00
All of	35	8 N.	21 E.	640.00
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	8 N.	21 E.	160.00
Total area				960.00
Occupied by railroad				12.62

Tract 4 lies across the axis of the anticlinal fold and the coal in the northeastern part is estimated to be at a depth of less than 700 feet. The dips are toward the south in the southeastern corner of the tract; toward the northwest in the northern part, while in the central part the coal pitches toward the southwest. In all cases the dip is but a few degrees.

TRACT NO. 5.

	Section.	Township.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	13	8 N.	21 E.	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	8 N.	21 E.	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	23	8 N.	21 E.	80
S. $\frac{1}{2}$	23	8 N.	21 E.	320
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	24	8 N.	21 E.	160
W. $\frac{1}{2}$	24	8 N.	21 E.	320
Total area				960

In the southeastern part of tract 5 the coal is estimated to be 600 to 700 feet beneath the surface, where it dips at a low angle toward the northwest. The dip increases slightly toward the northwest, reaching 5° to 6° in the northwestern part, where the coal is at an estimated depth of 1,200 feet.

TRACT NO. 6.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	8 N	21 E.	80.00
NE. $\frac{1}{4}$	36	8 N.	21 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	36	8 N.	21 E.	80.00
E. $\frac{1}{2}$ of W. $\frac{1}{4}$	36	8 N.	21 E.	160.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	8 N.	22 E.	80.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	8 N.	22 E.	80.00
Lots 3 and 4	30	8 N.	22 E.	69.09
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	8 N.	22 E.	80.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	31	8 N.	22 E.	80.00
Lots 1 and 2	31	8 N.	22 E.	69.46
Total area				938.55
Occupied by railroad				8.59

The axis or central part of the anticlinal fold passes across the tract near the northwest side in a northeast-southwest direction. Upon the northwest side near and north of the railroad the dip is toward the northwest at a low angle, while in the southeastern part it is toward the southeast at somewhat greater inclination. In the north-central part the coal is estimated to be 500 to 700 feet in depth.

TRACT NO. 7.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	24	8 N.	21 E.	160.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	25	8 N.	21 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	8 N.	22 E.	80.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	8 N.	22 E.	40.00
SE. $\frac{1}{4}$	19	8 N.	22 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	8 N.	22 E.	80.00
Lots 2, 3, and 4	19	8 N.	22 E.	101.54
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	8 N.	22 E.	80.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	8 N.	22 E.	80.00
Lots 1 and 2	30	8 N.	22 E.	68.63
Total area				930.17
Occupied by railroad				4.48

The coal in tract 7 is at a depth of 400 to 500 feet in the eastern and southeastern parts, where it is inclined at low angles toward the west and northwest. In the northwestern part of the tract the coal will be found at a depth of, approximately, 900 feet.

TRACT NO. 8.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	8 N.	21 E.	80.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	8 N.	22 E.	80.00
NW. $\frac{1}{4}$	17	8 N.	22 E.	160.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	18	8 N.	22 E.	160.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	18	8 N.	22 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	8 N.	22 E.	80.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	8 N.	22 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	18	8 N.	22 E.	40.00
Lots 3 and 4	18	8 N.	22 E.	66.09
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	8 N.	22 E.	80.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	19	8 N.	22 E.	40.00
Lot 1	19	8 N.	22 E.	33.38
Total area				939.47

In tract 8 the coal dips at a nearly even low angle of about 5° toward the northwest. The coal in the southeast corner is at a depth of about 550 feet.

TRACT NO. 9.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	29	8 N.	22 E.	160.00
S. $\frac{1}{2}$	29	8 N.	22 E.	320.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	30	8 N.	22 E.	160.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	8 N.	22 E.	80.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	32	8 N.	22 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	8 N.	22 E.	80.00
Total area				960.00
Occupied by railroad				3.48

The axis of the Milton anticlinal fold passes across the northeastern part of the tract in a northeast-southwest direction where the coal pitches at a low inclination toward the southwest. In the central and

southeastern parts the dip is toward the southeast, gradually increasing until it reaches 10° to 15° in the southeastern corner. The coal in the northwestern part near the railroad is estimated to be at a depth of 300 to 500 feet.

TRACT NO. 10.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	8	8 N.	22 E.	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	8 N.	22 E.	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	8	8 N.	22 E.	40
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	9	8 N.	22 E.	40
S. $\frac{1}{2}$	9	8 N.	22 E.	320
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	8 N.	22 E.	40
NW. $\frac{1}{4}$	16	8 N.	22 E.	160
NE. $\frac{1}{4}$	17	8 N.	22 E.	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	8 N.	22 E.	80
Total area.....				960

The coal in the southeast side of tract 10 is at a depth of approximately 600 feet and dips toward the northwest 5° and 10° , reaching a depth of approximately 1,000 feet in the northwest side.

TRACT NO. 11.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	26	8 N.	22 E.	320
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	27	8 N.	22 E.	80
SW. $\frac{1}{4}$	27	8 N.	22 E.	160
S. $\frac{1}{2}$	28	8 N.	22 E.	320
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	8 N.	22 E.	80
Total area.....				960

The above tract lies upon the southwest side of the anticlinal fold and is separated from the outcrop of the coal by leased lands. The dip is toward the southwest 15° to 20° and the coal is at a depth of 800 to 1,000 feet in the northwestern part.

TRACT NO. 12.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	9	8 N.	22 E.	40
All of.....	10	8 N.	22 E.	640
SW. $\frac{1}{4}$	11	8 N.	22 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	8 N.	22 E.	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	11	8 N.	22 E.	40
Total area.....				960

The coal in tract 12 occurs under practically the same conditions of structure as in tract 10.

TRACT NO. 13.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	11	8 N.	22 E.	40
E. $\frac{1}{2}$	11	8 N.	22 E.	320
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	12	8 N.	22 E.	80
W. $\frac{1}{2}$	12	8 N.	22 E.	320
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	13	8 N.	22 E.	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	14	8 N.	22 E.	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	8 N.	22 E.	40
Total area.....				960

The coal crops out across the extreme southeastern part of the tract, dipping toward the northwest about 15° . The dip decreases north-westward, reaching 2° to 5° in the northwestern part, where the coal is approximately 1,000 feet in depth. This tract contains about 920 acres of coal.

TRACT NO. 14.

	Sec- tion.	Town- ship.	Range.	Acres.
NE $\frac{1}{4}$	12	8 N.	22 E.	160.00
E $\frac{1}{2}$ of SE $\frac{1}{4}$	12	8 N.	22 E.	80.00
E $\frac{1}{2}$	7	8 N.	23 E.	320.00
E $\frac{1}{2}$ of SW $\frac{1}{4}$	7	8 N.	23 E.	80.00
SE $\frac{1}{4}$ of NW $\frac{1}{4}$	7	8 N.	23 E.	40.00
Lots 2, 3 and 4.....	7	8 N.	23 E.	100.62
NW $\frac{1}{4}$ of SW $\frac{1}{4}$	8	8 N.	23 E.	40.00
W $\frac{1}{2}$ of NW $\frac{1}{4}$	8	8 N.	23 E.	80.00
Total area.....				900.62

The coal crops out near the southern border of tract 14, dipping toward the north about 15° . The dip decreases to nearly 2° in the extreme northern part, where the coal is at a depth of approximately 1,000 feet. The tract contains about 880 acres of coal.

TRACT NO. 15.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	8 N.	23 E.	40
SE. $\frac{1}{4}$	4	8 N.	23 E.	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	8 N.	23 E.	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	8 N.	23 E.	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	8 N.	23 E.	80
NE. $\frac{1}{4}$	8	8 N.	23 E.	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	8	8 N.	23 E.	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	8	8 N.	23 E.	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	8	8 N.	23 E.	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	8 N.	23 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	8 N.	23 E.	80
Total area.....				960

The coal in this tract occurs under practically the same structural conditions as in tract 14, the coal at the outcrop dipping 15° to 20° . The tract contains about 860 acres of coal.

TRACT NO. 16.

	Sec- tion.	Town- ship.	Range.	Acres.
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	8 N.	23 E.	80.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	8 N.	23 E.	80.00
Lots 3 and 4	2	8 N.	23 E.	63.24
Lots 1, 2, and 3	3	8 N.	23 E.	95.74
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	3	8 N.	23 E.	160.00
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	3	8 N.	23 E.	160.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	8 N.	23 E.	40.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	8 N.	23 E.	80.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	9 N.	23 E.	40.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	9 N.	23 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	9 N.	23 E.	40.00
Total area.....				918.98

The coal in this tract occurs under the same conditions of structure as in tracts 14 and 15, the dip at the outcrop being about 15° . Tract 16 contains, approximately, 850 acres of coal.

TRACT NO. 17.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	24	8 N.	22 E.	40.00
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	8 N.	23 E.	80.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	19	8 N.	23 E.	40.00
Lot 4	19	8 N.	23 E.	34.43
E. $\frac{1}{2}$	30	8 N.	23 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	30	8 N.	23 E.	160.00
Lots 1, 2, 3, and 4	30	8 N.	23 E.	137.84
Total area				812.27

The coal crops out across the north tier of forties in this tract. Recent prospecting has shown that the coal is 5 feet thick. The dip varies slightly between 15° to 22° throughout the tract. There are about 720 acres of coal in the tract.

TRACT NO. 18.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{4}$ of S. $\frac{1}{4}$	20	8 N.	23 E.	160
All of	29	8 N.	23 E.	640
Total area				800

The coal in the above tract occurs under practically the same conditions of structure as in tract 17. Prospecting in the northwestern corner shows the coal to be about 4 feet in thickness. The tract contains about 760 acres of coal.

TRACT NO. 19.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$	22	8 N.	23 E.	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	22	8 N.	23 E.	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	22	8 N.	23 E.	40
SW. $\frac{1}{4}$	22	8 N.	23 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	22	8 N.	23 E.	80
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	27	8 N.	23 E.	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	27	8 N.	23 E.	40
W. $\frac{1}{2}$	27	8 N.	23 E.	320
Total area				960

The coal in this tract has been shown by prospecting to be about 7 feet in thickness, with a thin parting of shale. It crops out across the extreme northern edge, dipping toward the southeast nearly 30° . The dip decreases slightly toward the south until it reaches a depth of 1,000 to 1,200 feet at the southern border. The tract contains about 940 acres of coal.

TRACT NO. 20.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	8 N.	23 E.	20
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	14	8 N.	23 E.	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	22	8 N.	23 E.	40
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{2}$	23	8 N.	23 E.	80
W. $\frac{1}{2}$	23	8 N.	23 E.	320
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	8 N.	23 E.	20
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	8 N.	23 E.	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	8 N.	23 E.	80
NW. $\frac{1}{4}$	26	8 N.	23 E.	160
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	27	8 N.	23 E.	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	27	8 N.	23 E.	40
Total area.....				960

The coal in the above tract occurs under practically the same conditions of structure and at about the same depth beneath the surface as in tract 19, with the exception that the coal at the outcrop inclines toward the southeast between 15° and 20° . The tract contains, approximately, 930 acres of coal.

TRACT NO. 21.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	13	8 N.	23 E.	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	8 N.	23 E.	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	8 N.	23 E.	20
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	23	8 N.	23 E.	160
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{2}$	23	8 N.	23 E.	80
W. $\frac{1}{2}$	24	8 N.	23 E.	320
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	8 N.	23 E.	80
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	8 N.	23 E.	20
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	8 N.	23 E.	80
Total area.....				960

The coal in tract 21 occurs under practically the same conditions of structure and at about the same depth beneath the surface as in tract 20. The coal at the outcrop inclines toward the southwest between 15° and 20° . The tract contains about 940 acres.

TRACT NO. 22.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	13	8 N.	23 E.	160.00
E. $\frac{1}{2}$	24	8 N.	23 E.	320.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	25	8 N.	23 E.	40.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	25	8 N.	23 E.	80.00
Lots 3 and 4	18	8 N.	24 E.	67.67
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	8 N.	24 E.	80.00
Lots 1, 2, 3, and 4	19	8 N.	24 E.	136.16
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	30	8 N.	24 E.	40.00
Lot 1	30	8 N.	24 E.	34.21
Total area				958.04

The coal comes to the surface in the extreme northern end, dipping toward the southeast at about 25° . Toward the south the dips decrease until the coal becomes nearly flat in the central and southeastern parts, where it reaches a depth of 800 to 1,000 feet beneath the level of the outcrop. Approximately the entire tract contains coal.

TRACT NO. 23.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	13	8 N.	23 E.	40.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	7	8 N.	24 E.	40.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	8 N.	24 E.	80.00
E. $\frac{1}{2}$	18	8 N.	24 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	18	8 N.	24 E.	160.00
Lots 1 and 2	18	8 N.	24 E.	67.49
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	8 N.	24 E.	80.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	8 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	8 N.	24 E.	80.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	8 N.	24 E.	40.00
Total area				947.49

The coal in tract 23 comes to the surface near the northern border, dipping toward the south-southeast about 20° . The dip decreases

toward the south, becoming nearly flat in the southern part in the basin between the Milton and Backbone anticlines. The area of coal in this tract is about 900 acres.

TRACT NO. 24.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	8	8 N.	24 E.	80
W. $\frac{1}{4}$	16	8 N.	24 E.	320
E. $\frac{1}{4}$	17	8 N.	24 E.	320
E. $\frac{1}{4}$ of W. $\frac{1}{4}$	17	8 N.	24 E.	160
W. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	8 N.	24 E.	80
Total area				960

The coal crops across the extreme northwest corner of tract 24, dipping toward the southeast about 15° and in the east end near the center of section 16 dipping toward the west 15° to 20° . In the central part of the tract the coal becomes nearly flat in the center of the basin. There are about 920 acres of coal in tract 24.

TRACT NO. 25.

	Sec- tion.	Town- ship.	Range.	Acre.
SE. $\frac{1}{4}$	19	8 N.	24 E.	160
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	8 N.	24 E.	40
E. $\frac{1}{4}$	20	8 N.	24 E.	320
SW. $\frac{1}{4}$	20	8 N.	24 E.	160
S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	8 N.	24 E.	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	8 N.	24 E.	40
W. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	8 N.	24 E.	80
N. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	8 N.	24 E.	80
Total area				960

The coal in tract 25 is entirely beneath the surface and the dip is at a low angle toward the south in the southern part and the southwest in the western part of the tract. The coal is accessible in the northeast corner at a depth of a few hundred feet.

TRACT NO. 26.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	8 N.	24 E.	80
E. $\frac{1}{2}$	21	8 N.	24 E.	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	21	8 N.	24 E.	160
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	8 N.	24 E.	80
W. $\frac{1}{2}$	22	8 N.	24 E.	320
Total area				960

The coal crops across the northern border, striking a little south of east, dipping southward at about 15° . The dip of the coal will vary but slightly throughout the tract. The tract contains about 920 acres of coal.

TRACT NO. 27.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, and 3.	3	8 N.	24 E.	85.18
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	3	8 N.	24 E.	80.00
S. $\frac{1}{2}$	3	8 N.	24 E.	320.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	3	8 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	8 N.	24 E.	40.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	4	8 N.	24 E.	80.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	10	8 N.	24 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	8 N.	24 E.	80.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	9 N.	24 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	9 N.	24 E.	40.00
Total area				925.18
Occupied by railroad				9.15

In tract 27 the coal crops along the extreme northwest border, dipping toward the southeast 20° to 30° . The inclination of the coal gradually decreases toward the southeast, becoming nearly flat in the southeast corner near the center of the basin. There are approximately 900 acres of coal in the tract.

TRACT NO. 28.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	8 N.	24 E.	40.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	8 N.	24 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	10	8 N.	24 E.	40.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	10	8 N.	24 E.	160.00
S. $\frac{1}{2}$	10	8 N.	24 E.	320.00
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	11	8 N.	24 E.	80.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	11	8 N.	24 E.	80.00
NW. $\frac{1}{4}$	11	8 N.	24 E.	160.00
Total area				960.00
Occupied by railroad				12.20

The coal crops along the southeastern border, dipping toward the northwest 10° to 15° . The dip of this coal also decreases toward the northwest, becoming nearly flat in the northwest side of the tract near the center of the basin or downward fold. The tract contains about 900 acres of coal.

TRACT NO. 29.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	22	8 N.	24 E.	320
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	23	8 N.	24 E.	80
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	23	8 N.	24 E.	160
W. $\frac{1}{2}$	23	8 N.	24 E.	320
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	8 N.	24 E.	80
Total area				960

This tract lies on the south side of the Backbone anticlinal. The coal crops along the north side of the tract, dipping toward the south about 20° . The dip varies but slightly throughout the tract. The coal in the southern border is at a depth of about 1,500 feet. There are about 930 acres of coal in tract 29.

TRACT NO. 30.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 3 and 4.....	1	8 N.	24 E.	52.87
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	1	8 N.	24 E.	80.00
SW. $\frac{1}{4}$	1	8 N.	24 E.	160.00
Lots 1, 2, 3, and 4	2	8 N.	24 E.	109.84
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	2	8 N.	24 E.	160.00
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	2	8 N.	24 E.	160.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	8 N.	24 E.	40.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	11	8 N.	24 E.	80.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	12	8 N.	24 E.	80.00
Total area				922.71
Occupied by railroad.....				9.15

Tract 30 lies on the north side of the Backbone anticline and extends across the center of the Spiro syncline. The outcrop is across the southeast corner, the coal dipping toward the northwest about 20° . The coal decreases in dip to the northward, becoming nearly flat in the northern part. There are approximately 870 acres of coal in the tract.

TRACT NO. 31.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	13	8 N.	24 E.	160
E. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	8 N.	24 E.	80
NE. $\frac{1}{4}$	24	8 N.	24 E.	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	24	8 N.	24 E.	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	24	8 N.	24 E.	40
W. $\frac{1}{2}$	24	8 N.	24 E.	320
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	8 N.	24 E.	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	8 N.	24 E.	80
Total area				960

In this tract the coal crops out across the north tier of forties, dipping toward the south about 15° . The structure of the coal is practically the same as that in tract 29. There are about 870 acres of coal in tract 31.

TRACT NO. 32.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1 and 2.....	1	8 N.	24 E.	51. 73
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	8 N.	24 E.	80. 00
SE. $\frac{1}{4}$	1	8 N.	24 E.	160. 00
Lots 3, 4, 5, 6, and 7.....	6	8 N.	25 E.	166. 82
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	8 N.	25 E.	80. 00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	8 N.	25 E.	40. 00
S. $\frac{1}{2}$	36	9 N.	24 E.	320. 00
Total area.....				898. 55

The coal in this tract occurs under practically the same conditions of structure as in tract 30, the northern part lying near the center of the basin. The tract contains about 850 acres of coal.

TRACT NO. 33.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	24	8 N.	24 E.	40. 00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	8 N.	24 E.	40. 00
Lot 4.....	18	8 N.	25 E.	39. 13
E. $\frac{1}{2}$	19	8 N.	25 E.	320. 00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	19	8 N.	25 E.	160. 00
Lots 1, 2, 3, and 4.....	19	8 N.	25 E.	155. 56
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	8 N.	25 E.	80. 00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	30	8 N.	25 E.	40. 00
Lot 1.....	30	8 N.	25 E.	38. 64
Total area.....				913. 33

The structure of the coal occurring in tract 33 is about the same as that in tract 31. The dip is toward the south at nearly 15°. This tract contains approximately 890 acres of coal.

TRACT NO. 34.

	Sec- tion.	Town- ship.	Range.	Acres.
Lot 4	5	8 N.	25 E.	25. 41
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	8 N.	25 E.	40. 00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	5	8 N.	25 E.	40. 00
Lots 1 and 2	6	8 N.	25 E.	50. 89
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	8 N.	25 E.	80. 00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	6	8 N.	25 E.	80. 00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	6	8 N.	25 E.	40. 00
Lot 4	30	9 N.	25 E.	38. 97
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	31	9 N.	25 E.	160. 00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	9 N.	25 E.	160. 00
Lots 1, 2, 3, and 4	31	9 N.	25 E.	158. 00
Total area				873. 27

The coal in tract 34 occurs under practically the same conditions as found in tracts 30 and 32. The dip at the outcrop is about 25° , and in the center of the tract about 10° , becoming nearly flat at the northern end. The tract contains about 835 acres of coal.

TRACT NO. 35.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$	20	8 N.	25 E.	320
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	28	8 N.	25 E.	160
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	8 N.	25 E.	40
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	29	8 N.	25 E.	160
Total area				680

In tract 35 the coal crops along the extreme northern edge, dipping toward the south about 15° . This inclination decreases slightly toward the south until the coal reaches a depth of 1,200 to 1,500 feet at the southern border of the tract.

TRACT NO. 36.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, and 3.....	5	8 N.	25 E.	76.31
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	8 N.	25 E.	80.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	8 N.	25 E.	80.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	5	8 N.	25 E.	40.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	5	8 N.	25 E.	40.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	8 N.	25 E.	40.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	31	9 N.	25 E.	160.00
W. $\frac{1}{2}$	32	9 N.	25 E.	320.00
Total area.....				836.31

The structure of the coal in this tract is practically the same as in tract 34, the strike of the coal along the southern border changing from east-west in the southwest corner to southeast-northwest in the southeast corner. The dip at the outcrop is about 20° , decreasing to 15° in the center and 5° to 10° in the north end, where the coal is at a depth of about 1,000 to 1,500 feet. The tract contains about 810 acres of coal.

TRACT NO. 37.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4.....	4	8 N.	25 E.	102.12
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	4	8 N.	25 E.	160.00
S. $\frac{1}{2}$	4	8 N.	25 E.	320.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	8 N.	25 E.	160.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	9	8 N.	25 E.	80.00
Total area.....				822.12
Occupied by railroads.....				13.42

Tract 37 lies in the north side of the Backbone anticline, the coal outcropping near the southern border of the tract and dipping toward the north 13° to 25° . The dip decreases slightly toward the north. Prospects show the coal to be 3 feet 10 inches in thickness. The tract contains about 750 acres of coal.

TRACT NO. 38.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	22	8 N.	25 E.	160.00
S. $\frac{1}{2}$	22	8 N.	25 E.	320.00
N. $\frac{1}{2}$	27	8 N.	25 E.	320.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	27	8 N.	25 E.	40.00
• Total area.....				840.00
Occupied by railroads.....				31.96

This tract is located in the south side of the Backbone anticline. The coal at the outcrop strikes a little south of east and dips toward the south about 15° . This dip is maintained with little variation throughout the tract. There are about 790 acres of coal in tract 38.

TRACT NO. 39.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4.....	3	8 N.	25 E.	101.72
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	3	8 N.	25 E.	160.00
S. $\frac{1}{2}$	3	8 N.	25 E.	320.00
N. $\frac{1}{2}$	10	8 N.	25 E.	320.00
Total area.....				901.72
Occupied by railroads.....				41.63

The coal in this tract will be found to occur under practically the same conditions of structure as in tract 37. The strike is east and west across the tract nearly an eighth of a mile from the southern border. There are approximately 820 acres of coal in this tract.

TRACT NO. 40.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	23	8 N.	25 E.	320
N. $\frac{1}{2}$	26	8 N.	25 E.	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	26	8 N.	25 E.	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	8 N.	25 E.	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	8 N.	25 E.	40
Total area.....				920

The coal in this tract will be found to have essentially all the conditions of structure that occur in tract 38. The area of coal is about 850 acres.

TRACT NO. 41.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4.....	2	8 N.	25 E.	101. 12
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	2	8 N.	25 E.	160. 00
S. $\frac{1}{2}$	2	8 N.	25 E.	320. 00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	11	8 N.	25 E.	160. 00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	8 N.	25 E.	80. 00
Total area.....				821. 12
Occupied by railroad.....				13. 68

The coal in this tract will be found to occur under practically the same conditions of structure as in tracts 37 and 39. The strike is east and west across the tract, nearly one-eighth of a mile from the southern border. The tract contains about 755 acres of coal.

TRACT NO. 42.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of S $\frac{1}{2}$	24	8 N.	25 E.	160
All of.....	25	8 N.	25 E.	640
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	36	8 N.	25 E.	160
Total area.....				960

The coal in this tract will be found to have essentially the same conditions of structure as occur in tracts 38 and 40. It is nearly uniformly inclined at about 15°. The coal crops along the extreme northern boundary, striking east and west. The whole tract is underlain by coal.

TRACT NO. 43.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4.....	1	8 N.	25 E.	100. 72
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	8 N.	25 E.	160. 00
S. $\frac{1}{2}$	1	8 N.	25 E.	320. 00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	12	8 N.	25 E.	160. 00
Lots 4, 5, 6, and 7.....	6	8 N.	26 E.	157. 76
Lot 1.....	7	8 N.	26 E.	43. 08
Total area.....				941. 56
Occupied by railroad.....				1. 79

The coal in this tract will be found to occur under practically the same structural conditions as in tracts 37, 39, and 41. The coal strikes east and west very near the southern border. It is estimated that the entire area of the tract contains coal.

TRACT NO. 44.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	8 N.	26 E.	40.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	19	8 N.	26 E.	40.00
Lot 4	19	8 N.	26 E.	42.39
E. $\frac{1}{2}$	30	8 N.	26 E.	320.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	30	8 N.	26 E.	160.00
Lots 1, 2, 3, and 4	30	8 N.	26 E.	168.92
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	8 N.	26 E.	40.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	8 N.	26 E.	40.00
Lot 1	31	8 N.	26 E.	42.01
Total area				893.32

The coal in tract 44 will be found to have the same structure as in tract 42, except that the dip is somewhat less, being about 15° at the outcrop and decreasing toward the south, reaching 10° in the center. The crop of the coal is very near the extreme northern boundary of the tract.

TRACT NO. 45.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	8 N.	26 E.	40.00
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	5	8 N.	26 E.	40.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	5	8 N.	26 E.	40.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	8 N.	26 E.	80.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	8 N.	26 E.	80.00
Lots 3 and 4	5	8 N.	26 E.	52.54
Lots 1, 2, and 3	6	8 N.	26 E.	77.49
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	8 N.	26 E.	80.00
SE. $\frac{1}{4}$	6	8 N.	26 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	8 N.	26 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	8 N.	26 E.	40.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	7	8 N.	26 E.	40.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	7	8 N.	26 E.	40.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	9 N.	26 E.	80.00
Total area				930.03

The coal crops out along the southeastern border of the tract, dipping north-northwest. The crop is in the lowlands of Poteau River, and dips were not determinable. It is estimated that the tract contains 890 acres of coal.

TRACT NO. 46.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	8 N.	26 E.	80
S. $\frac{1}{2}$	20	8 N.	26 E.	320
N. $\frac{1}{2}$	29	8 N.	26 E.	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	29	8 N.	26 E.	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	8 N.	26 E.	80
Total area				960

The coal in this tract will be found to be essentially the same as in tract 44 except that the strike changes from east-west to northeast. The outcrop is near the northern border of the tract, and the area of coal is about 940 acres.

TRACT NO. 47.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	20	8 N.	26 E.	40
S. $\frac{1}{2}$	21	8 N.	26 E.	320
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	21	8 N.	26 E.	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	8 N.	26 E.	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	27	8 N.	26 E.	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	27	8 N.	26 E.	80
N. $\frac{1}{2}$	28	8 N.	26 E.	320
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	8 N.	26 E.	40
Total area				960

The coal in this tract will be found to be essentially the same as in tract 46 except that the dip decreases more rapidly southward. At the outcrop it is near 15° , while in the southeastern part of the tract it has decreased to 5° . The area of coal is approximately 920 acres.

TRACT NO. 48.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	14	8 N.	26 E.	160
SW. $\frac{1}{4}$	14	8 N.	26 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	14	8 N.	26 E.	80
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	15	8 N.	26 E.	80
N. $\frac{1}{2}$	23	8 N.	26 E.	320
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	23	8 N.	26 E.	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	23	8 N.	26 E.	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	23	8 N.	26 E.	80
Total area				960
Occupied by cemetery ^a				5

^a Only the deposits of coal or asphalt in or under the land will be sold.

The coal crops very near the northern border, dipping toward the south at about 15°. The inclination decreases toward the south, approaching 7° in the southern border, where the coal is at a depth of about 1,200 feet. The tract has an area of about 900 acres of coal.

TRACT NO. 49.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	12	8 N.	26 E.	160
N. $\frac{1}{2}$	13	8 N.	26 E.	320
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	13	8 N.	26 E.	40
SW. $\frac{1}{4}$	13	8 N.	26 E.	160
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	14	8 N.	26 E.	160
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	8 N.	26 E.	40
Total area				880

The coal in tract 49 occurs under practically the same conditions of structure and at the same depth beneath the surface as in tract 48. The tract contains approximately 830 acres of coal.

TRACT NO. 50.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	7	8 N.	27 E.	160.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	7	8 N.	27 E.	40.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	7	8 N.	27 E.	80.00
SW. $\frac{1}{4}$	8	8 N.	27 E.	160.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	8 N.	27 E.	80.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	8 N.	27 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	17	8 N.	27 E.	80.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	18	8 N.	27 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	18	8 N.	27 E.	80.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	18	8 N.	27 E.	40.00
Total area				920.00
Occupied by railroad				33.27

The coal crops out very near the northern border, dipping toward the south 10° to 15° . The coal becomes gradually flatter toward the south, reaching a depth of about 1,000 feet in the southern border of the tract. There are about 900 acres of coal in tract 50.

TRACT NO. 51.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	8 N.	27 E.	40.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	8 N.	27 E.	80.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	8 N.	27 E.	160.00
S. $\frac{1}{4}$	9	8 N.	27 E.	320.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	8 N.	27 E.	40.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	8 N.	27 E.	80.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	8 N.	27 E.	40.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	16	8 N.	27 E.	160.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	8 N.	27 E.	40.00
Total area				960.00
Occupied by railroad				8.11

Practically the same conditions of structure prevail in this tract as are found in tract 50. The tract contains about 900 acres of coal.

TRACT NO. 52.

	Sec- tion.	Town- ship.	Range.	Acres.
Lot 4	1	8 N.	23 E.	30. 75
Lots 1 and 2.....	2	8 N.	23 E.	62. 28
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	2	8 N.	23 E.	80. 00
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	9 N.	23 E.	40. 00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	9 N.	23 E.	40. 00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	9 N.	23 E.	80. 00
E. $\frac{1}{4}$	35	9 N.	23 E.	320. 00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	35	9 N.	23 E.	160. 00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	9 N.	23 E.	40. 00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	36	9 N.	23 E.	80. 00
Total area				933. 03

Tract 52 lies in the northwest side of the Milton anticlinal. The coal dips toward the northwest about 10° , decreasing slightly toward the northwest. At the northwestern border the coal is at a depth of approximately 1,000 feet. This tract has a coal area of approximately 855 acres.

TRACT NO. 53.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	24	9 N.	23 E.	40. 00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	24	9 N.	23 E.	80. 00
E. $\frac{1}{4}$	25	9 N.	23 E.	320. 00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	25	9 N.	23 E.	160. 00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	9 N.	23 E.	40. 00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	25	9 N.	23 E.	40. 00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	9 N.	23 E.	40. 00
Lots 2, 3, and 4.....	19	9 N.	24 E.	118. 88
Lots 1, 2, and 3.....	30	9 N.	24 E.	119. 13
Total area				958. 01

The coal comes to the surface very near the southern border, dipping northwestward nearly 10° . The dip decreases slightly northwestward. It reaches a depth of about 1,000 feet in the northwest side. The tract contains approximately 820 acres of coal.

TRACT NO. 54.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	9 N.	24 E.	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	9 N.	24 E.	40
E. $\frac{1}{2}$	19	9 N.	24 E.	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	19	9 N.	24 E.	160
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	20	9 N.	24 E.	160
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	9 N.	24 E.	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	9 N.	24 E.	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	9 N.	24 E.	80
Total area				960

The coal comes to the surface very near the southern border, dipping northwestward about 10° . The slope of the coal decreases slightly toward the north. It approaches a depth of 1,000 feet in the northwest side. There are approximately 930 acres of coal in this tract.

TRACT NO. 55.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	17	9 N.	24 E.	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	9 N.	24 E.	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	9 N.	24 E.	40
NE. $\frac{1}{4}$	20	9 N.	24 E.	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	20	9 N.	24 E.	80
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	20	9 N.	24 E.	160
Total area				840

The coal in tract 55 is the same as that in tract 54, and the structure is the same, with the exception that the dips range between 5° and 10° at the outcrop. At the north end the coal will be found to dip about 3° toward the northwest. The tract contains approximately 810 acres of coal.

TRACT NO. 56.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	9	9 N.	24 E.	40
W. $\frac{1}{4}$ of SE. $\frac{1}{4}$	9	9 N.	24 E.	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	9 N.	24 E.	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	9	9 N.	24 E.	80
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	16	9 N.	24 E.	160
W. $\frac{1}{2}$	16	9 N.	24 E.	320
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	21	9 N.	24 E.	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	9 N.	24 E.	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	21	9 N.	24 E.	80
Total area				880

The strike of the coal in this tract is northeast-southwest at the outcrop near the southeastern border. The dip is toward the northwest 5° to 10° , decreasing to about 3° in the north end, where the coal is at a depth of approximately 1,000 feet. The tract contains about 830 acres of coal.

TRACT NO. 57.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{4}$ of SW. $\frac{1}{4}$	3	9 N.	24 E.	80
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	9	9 N.	24 E.	160
W. $\frac{1}{4}$	10	9 N.	24 E.	320
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	9 N.	24 E.	40
NW. $\frac{1}{4}$	15	9 N.	24 E.	160
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	16	9 N.	24 E.	160
Total area				920

Tract 57 contains the same coal occurring under practically the same conditions of structure as in tract 56. It contains, approximately, 860 acres of coal.

TRACT NO. 58.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	9 N.	24 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	2	9 N.	24 E.	40.00
Lot 4	2	9 N.	24 E.	39.98
Lot 1	3	9 N.	24 E.	39.79
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	3	9 N.	24 E.	80.00
SE. $\frac{1}{4}$	3	9 N.	24 E.	160.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	3	9 N.	24 E.	40.00
E. $\frac{1}{4}$	10	9 N.	24 E.	320.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	11	9 N.	24 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	9 N.	24 E.	80.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	15	9 N.	24 E.	40.00
Total area.....				959.77

The coal in the southern part of tract 58 dips toward the northwest at 3° to 6° . In the northern part it varies little above or below 3° . The tract contains approximately 930 acres of coal.

TRACT NO. 59.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, and 3.....	2	9 N.	24 E.	121.14
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	2	9 N.	24 E.	80.00
SE. $\frac{1}{4}$	2	9 N.	24 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	9 N.	24 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	2	9 N.	24 E.	40.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	11	9 N.	24 E.	80.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	11	9 N.	24 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	9 N.	24 E.	80.00
Total area.....				681.14

The coal in tract 59 occurs under practically the same conditions of structure as in tract 58. The tract contains about 660 acres of coal.

TRACT NO. 60.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4	1	9 N.	24 E.	161.36
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	9 N.	24 E.	160.00
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	1	9 N.	24 E.	160.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	1	9 N.	24 E.	40.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	9 N.	24 E.	80.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	9 N.	24 E.	40.00
Total area				641.36

The coal in tract 60 occurs under practically the same conditions of structure as in tracts 58 and 59, except that the dip is in a more northerly direction. The dip of the coal will average probably 5° . The tract contains, approximately, 575 acres of coal.

TRACT NO. 61.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	9 N.	24 E.	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	9 N.	24 E.	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	9 N.	24 E.	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	9 N.	24 E.	40
SE. $\frac{1}{4}$	34	9 N.	24 E.	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	9 N.	24 E.	80
SE. $\frac{1}{4}$	35	9 N.	24 E.	160
W. $\frac{1}{2}$	35	9 N.	24 E.	320
Total area				960

This tract lies in the southeast side of the Milton anticline and the coal crops very near the northwest border, dipping toward the southeast 25° to 35° . The inclination of the coal gradually decreases toward the southeast, becoming nearly flat in the southeast corner near the axis of the Spiro basin. The coal at the north boundary of this tract has been shown by prospects to be $4\frac{1}{2}$ feet in thickness, with a thin parting of shaly coal near the middle. The tract contains about 910 acres of coal.

TRACT NO. 62.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	9 N.	24 E.	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	9 N.	24 E.	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	9 N.	24 E.	80
SW. $\frac{1}{4}$	25	9 N.	24 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	9 N.	24 E.	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	25	9 N.	24 E.	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	9 N.	24 E.	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	9 N.	24 E.	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	9 N.	24 E.	80
N. $\frac{1}{2}$	36	9 N.	24 E.	320
Total area				960

The coal in this tract occurs under practically the same conditions of structure and has the same dips and thickness as in tract 61. The tract contains about 900 acres of coal.

TRACT NO. 63.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	24	9 N.	24 E.	40.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	24	9 N.	24 E.	80.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	25	9 N.	24 E.	80.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	9 N.	24 E.	40.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	9 N.	24 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	9 N.	25 E.	80.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	9 N.	25 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	9 N.	25 E.	40.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	9 N.	25 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	19	9 N.	25 E.	40.00
Lots 2, 3, and 4	19	9 N.	25 E.	115.68
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	9 N.	25 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	9 N.	25 E.	80.00
Lots 1, 2, and 3	30	9 N.	25 E.	116.51
Total area				952.19

The outcrop of the coal is in the northwest border of the tract and the dip is eastward 20° to 25° . The dip decreases southeastward, reaching about 10° in the southeast side. Tract 63 contains about 910 acres of coal.

TRACT NO. 64.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	9 N.	25 E.	40.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	17	9 N.	25 E.	80.00
NW. $\frac{1}{4}$	17	9 N.	25 E.	160.00
E. $\frac{1}{2}$	18	9 N.	25 E.	320.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	9 N.	25 E.	80.00
Lot 4.....	18	9 N.	25 E.	38.14
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	9 N.	25 E.	80.00
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	19	9 N.	25 E.	40.00
Lot 1.....	19	9 N.	25 E.	38.32
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	9 N.	25 E.	40.00
Total area.....				916.46

The outcrop of the coal in this tract is in the northwest border and dips are eastward about 10° . The dip decreases slightly eastward through the tract. The area of coal is about 850 acres.

TRACT NO. 65.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	9 N.	25 E.	80
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	29	9 N.	25 E.	80
E. $\frac{1}{2}$	32	9 N.	25 E.	320
W. $\frac{1}{2}$	33	9 N.	25 E.	320
Total area.....				800

The coal in this tract is entirely beneath the surface and at a depth of 500 to 600 feet near the southern border. The dip is low toward the north.

TRACT NO. 66.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	27	9 N.	25 E.	160.00
SE. $\frac{1}{4}$	28	9 N.	25 E.	160.00
E. $\frac{1}{2}$	33	9 N.	25 E.	320.00
W. $\frac{1}{2}$	34	9 N.	25 E.	320.00
Total area.....				960.00
Occupied by railroad.....				19.60

The coal in this tract occurs under practically the same structural conditions as in tract 65.

TRACT NO. 67.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	26	9 N.	25 E.	160.00
SE. $\frac{1}{4}$	27	9 N.	25 E.	160.00
E. $\frac{1}{2}$	34	9 N.	25 E.	320.00
W. $\frac{1}{2}$	35	9 N.	25 E.	320.00
Total area				960.00
Occupied by railroad				11.16

The coal in tract 67 is entirely beneath the surface and is at a depth of 500 to 600 feet near the southern border. The dip is but few degrees and toward the north.

TRACT NO. 68.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	25	9 N.	25 E.	160.00
SE. $\frac{1}{4}$	26	9 N.	25 E.	160.00
E. $\frac{1}{2}$	35	9 N.	25 E.	320.00
W. $\frac{1}{2}$	36	9 N.	25 E.	320.00
Total area				960.00
Occupied by railroad				12.45

The coal in this tract occurs under practically the same condition of structure and at the same depth as in tracts 65, 66, and 67.

TRACT NO. 69.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	25	9 N.	25 E.	160.00
E. $\frac{1}{2}$	36	9 N.	25 E.	320.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	9 N.	26 E.	40.00
Lots 3 and 4	30	9 N.	26 E.	80.28
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	9 N.	26 E.	160.00
Lots 1, 2, 3, and 4	31	9 N.	26 E.	159.80
Total area				920.08
Occupied by railroad				13.68

In this tract the coal occurs under essentially the same structural conditions and at the same depth as in tracts 65, 66, 67, and 68.

TRACT NO. 70.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	9 N.	26 E.	40.00
W. $\frac{1}{4}$ of E. $\frac{1}{4}$	29	9 N.	26 E.	160.00
E. $\frac{1}{4}$ of W. $\frac{1}{4}$	29	9 N.	26 E.	160.00
W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	9 N.	26 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	29	9 N.	26 E.	40.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	9 N.	26 E.	40.00
SE. $\frac{1}{4}$	30	9 N.	26 E.	160.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	9 N.	26 E.	40.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	9 N.	26 E.	80.00
N. $\frac{1}{2}$ of N. $\frac{1}{4}$	32	9 N.	26 E.	160.00
Total area				960.00
Occupied by railroad				17.10

The coal is entirely beneath the surface, the outcrop being a little more than one-fourth of a mile from the southeast corner of the tract. The dip is toward the northwest, ranging between 3° and 10° . It is estimated that the coal is 200 to 300 feet below the surface in the southeast corner of the tract.

TRACT NO. 71.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 3 and 4	4	8 N.	26 E.	51.96
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	4	8 N.	26 E.	40.00
Lots 1 and 2	5	8 N.	26 E.	52.50
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	8 N.	26 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	9 N.	26 E.	80.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	9 N.	26 E.	80.00
S. $\frac{1}{2}$ of N. $\frac{1}{4}$	32	9 N.	26 E.	160.00
S. $\frac{1}{4}$	32	9 N.	26 E.	320.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	9 N.	26 E.	40.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	9 N.	26 E.	80.00
Total area				944.46

The coal in this tract crops out near the southeast side of the tract, dipping toward the northwest at a low angle. A prospect in the southeast corner of section 32 shows the coal to be 4 feet thick. Tract 71 contains approximately 870 acres of coal.

TRACT NO. 72.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	9 N.	26 E.	40.00
W. $\frac{1}{4}$ of SE. $\frac{1}{4}$	21	9 N.	26 E.	80.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	9 N.	26 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	21	9 N.	26 E.	40.00
W. $\frac{1}{4}$ of E. $\frac{1}{2}$	28	9 N.	26 E.	160.00
W. $\frac{1}{4}$	28	9 N.	26 E.	320.00
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	9 N.	26 E.	40.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	9 N.	26 E.	80.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	9 N.	26 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	9 N.	26 E.	80.00
Total area.....				960.00
Occupied by railroad.....				13.68

The structure of the coal in this tract will be found to be practically the same as in tract 70. The strike becomes slightly, the dip becoming more northerly. The coal crops near the southeast corner of the tract and its area is approximately 950 acres.

TRACT NO. 73.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	21	9 N.	26 E.	40.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	21	9 N.	26 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	22	9 N.	26 E.	40.00
SW. $\frac{1}{4}$	22	9 N.	26 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	22	9 N.	26 E.	80.00
W. $\frac{1}{4}$ of NE. $\frac{1}{4}$	27	9 N.	26 E.	80.00
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	27	9 N.	26 E.	40.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	27	9 N.	26 E.	40.00
W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	27	9 N.	26 E.	80.00
NW. $\frac{1}{4}$	27	9 N.	26 E.	160.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	28	9 N.	26 E.	160.00
Total area.....				960.00
Occupied by railroad.....				10.23

The coal in this tract will be found to be practically the same as in tract 72. The strike becomes slightly more easterly. The tract contains, approximately, 930 acres of coal.

TRACT NO. 74.

	Section.	Township.	Range.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	22	9 N.	26 E.	160.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	22	9 N.	26 E.	40.00
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	22	9 N.	26 E.	40.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	9 N.	26 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	23	9 N.	26 E.	80.00
W. $\frac{1}{2}$	23	9 N.	26 E.	320.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	9 N.	26 E.	40.00
NW. $\frac{1}{4}$	26	9 N.	26 E.	160.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	27	9 N.	26 E.	80.00
Total area.....				960.00
Occupied by railroad.....				8.40

In this tract the coal will be found to be practically the same as in tract 73. The strike of the coal changes slightly, becoming more easterly. The dip at the outcrop approaches 15° toward the north. Toward the northern part of the tract the dip decreases to probably 5° . The area of coal is approximately 930 acres.

TRACT NO. 75.

	Section.	Township.	Range.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	13	9 N.	26 E.	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	9 N.	26 E.	40
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	23	9 N.	26 E.	160
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	9 N.	26 E.	40
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	24	9 N.	26 E.	160
W. $\frac{1}{2}$	24	9 N.	26 E.	320
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	9 N.	26 E.	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	9 N.	26 E.	80
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	9 N.	26 E.	40
Total area.....				960

The coal outcrop strikes east and west along the extreme southern border, dipping north about 20° . The inclination decreases northward toward the center of the basin, and the coal is at an estimated depth of 1,200 feet in the northern border. A prospect near the southeast corner of the tract, where coal has been mined for local use, shows the coal to be 3 feet 6 inches, separated by a thin parting of shale near the middle. The tract contains about 945 acres of coal.

TRACT NO. 76.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	9 N.	26 E.	80
E. $\frac{1}{2}$ of E. $\frac{1}{4}$	24	9 N.	26 E.	160
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	9 N.	26 E.	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	9 N.	27 E.	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	9 N.	27 E.	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	9 N.	27 E.	80
W. $\frac{1}{2}$	19	9 N.	27 E.	320
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	9 N.	27 E.	80
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	9 N.	27 E.	80
Total area.....				960

The coal in this tract occurs under the same conditions and at the same depth as in tract 75, excepting that the dip of the coal at the outcrop is a little less. The thickness of the coal at a prospect in the southeast corner of the tract is reported to be 4 feet. The tract contains approximately 930 acres of coal.

TRACT NO. 77.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	9 N.	27 E.	80
E. $\frac{1}{2}$ of E. $\frac{1}{4}$	19	9 N.	27 E.	160
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	9 N.	27 E.	40
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{4}$	20	9 N.	27 E.	80
W. $\frac{1}{2}$	20	9 N.	27 E.	320
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	9 N.	27 E.	40
NW. $\frac{1}{4}$	29	9 N.	27 E.	160
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	9 N.	27 E.	80
Total area.....				960

In this tract the coal occurs under the same conditions and at the same depth beneath the surface as in tract 76, the dip of the coal at the outcrop being toward the north about 15° . A prospect has been made near the southern boundary of the tract, but the face of the coal was concealed by fallen earth when the examination was made. The tract contains approximately 920 acres of coal.

TRACT NO. 78.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	20	9 N.	27 E.	160
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{2}$	20	9 N.	27 E.	80
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{2}$	21	9 N.	27 E.	80
W. $\frac{1}{2}$	21	9 N.	27 E.	320
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	28	9 N.	27 E.	40
NW. $\frac{1}{4}$	28	9 N.	27 E.	160
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	9 N.	27 E.	80
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	9 N.	27 E.	40
Total area				960

The coal of tract 78 occurs under practically the same conditions of structure and at the same depth as in tract 77. The dip of the coal at the outcrop is about 15° . The tract contains approximately 925 acres of coal.

TRACT NO. 79, PARCEL NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
Part of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	10	8 N.	27 E.	36.16
Part of W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	10	8 N.	27 E.	69.56
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	8 N.	27 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	8 N.	27 E.	40.00
Part of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	15	8 N.	27 E.	33.32
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	8 N.	27 E.	40.00
Total area				299.04

Parcel No. 1 of this tract is in the south side of the Backbone anti-cline, and the coal dips about 10° at the outcrop. The area of coal in this parcel is about 295 acres.

TRACT NO. 79, PARCEL NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	21	9 N.	27 E.	160.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{2}$	21	9 N.	27 E.	80.00
Part of W. $\frac{1}{2}$	22	9 N.	27 E.	204.64
Part of NW. $\frac{1}{4}$	27	9 N.	27 E.	96.02
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	28	9 N.	27 E.	80.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	28	9 N.	27 E.	40.00
				660.66
Total area.....				959.70
Occupied by railroad.....				1.79

The coal in parcel No. 2 occurs under practically the same conditions of structure as in tract 78. The area of coal is approximately 600 acres.

Total area unleased segregated coal lands, McCurtain division, 72,811.01 acres.

MASSEY DIVISION, CORRESPONDING TO MASSEY MAP SHEET.

TRACT NO. 80.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, and 3.....	2	6 N.	16 E.	121.02
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	6 N.	16 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	7 N.	16 E.	80.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	7 N.	16 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	7 N.	16 E.	40.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	7 N.	16 E.	40.00
Total area.....				401.02

This tract lies in the south side of a shallow fold. The coal crops out in the south and west sides, dipping toward the northeast at angles of 3° to 5° . The tract contains, approximately, 360 acres of coal.

TRACT NO. 81.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4	1	6 N.	16 E.	160.32
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	6 N.	16 E.	160.00
Lots 4 and 5	6	6 N.	17 E.	70.94
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	36	7 N.	16 E.	160.00
S. $\frac{1}{2}$	36	7 N.	16 E.	320.00
Total area				871.26

The coal in tract 81 crops out along the extreme south side, dipping toward the north at 3° to 5° . The coal in the northern part of the tract in the central part of the basin, very near the center of section 36, has been proved by well drilling to be at a depth of 200 feet beneath the surface. The tract is entirely underlain by coal.

TRACT NO. 82.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 3 and 4	5	6 N.	17 E.	82.40
Lots 1, 2, and 3	6	6 N.	17 E.	121.83
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	6 N.	17 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	7 N.	17 E.	80.00
SE. $\frac{1}{4}$	31	7 N.	17 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	31	7 N.	17 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	7 N.	17 E.	40.00
Lots 2, 3, and 4	31	7 N.	17 E.	105.64
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	7 N.	17 E.	80.00
SW. $\frac{1}{4}$	32	7 N.	17 E.	160.00
Total area				949.87

The coal in tract 82 occurs under practically the same conditions of structure as found in tract 81. In both cases the coal crops out very near the crest of the low mountain which occupies the eastern part of the district. The tract contains approximately 900 acres of coal.

TRACT NO. 83.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	25	7 N.	16 E.	160
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	7 N.	16 E.	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	7 N.	16 E.	80
SE. $\frac{1}{4}$	26	7 N.	16 E.	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	7 N.	16 E.	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	7 N.	16 E.	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	7 N.	16 E.	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	7 N.	16 E.	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	7 N.	16 E.	80
NW. $\frac{1}{4}$	35	7 N.	16 E.	160
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	36	7 N.	16 E.	80
Total area.....				960

Tract 83 lies across the central part of the basin, the coal outcropping at the northeast and southwest sides, dipping in each case toward the center of the tract at about 3°. In the central part of the tract the coal is almost flat. This tract contains approximately 930 acres of coal.

TRACT NO. 84.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	22	7 N.	16 E.	80.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	23	7 N.	16 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	7 N.	16 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	26	7 N.	16 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	7 N.	16 E.	40.00
All of.....	27	7 N.	16 E.	640.00
Total area.....				960.00
Occupied by railroad.....				8.33

The coal in tract 84 occurs under practically the same conditions as found in tract 83, the coal coming to the surface on the northeast and southwest sides. This tract is entirely underlain by coal, except possibly a few acres at the south side.

TRACT NO. 85.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	21	7 N.	16 E.	320
All of.....	28	7 N.	16 E.	640
Total area.....				960

Tract 85 lies across the central part of a shallow trough, and the coal outcrops along the extreme southern border, dipping toward the north at 5° to 10° . The northern end of the tract is upon the axial part of the low anticline and where the coal dips toward the southwest at an angle of 1° to 3° . The coal in the southeastern corner is at a depth of but a few hundred feet below the surface, while in the northwestern part the depth is considerably increased because of the presence of a prominent ridge. The tract is entirely underlain by coal, except possibly a few acres at the southern border.

TRACT NO. 86.

	Sec- tion.	Town- ship.	Range.	Acres.
All of.....	16	7 N.	16 E.	640.00
N. $\frac{1}{2}$	21	7 N.	16 E.	320.00
Total area.....				960.00
Occupied by railroad				16.08

Tract 86 lies upon the north side of a low upward anticlinal fold in the rocks. The coal is entirely beneath the surface, and the dip throughout the tract is at low angles toward the northwest. Near the center of the east side of section 16 the coal is at an estimated depth of 150 feet.

TRACT NO. 87.

	Sec- tion.	Town- ship.	Range.	Acres
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	15	7 N.	16 E.	40.
S. $\frac{1}{4}$ of SE. $\frac{1}{4}$	15	7 N.	16 E.	80.
SW. $\frac{1}{4}$	15	7 N.	16 E.	160.
S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	7 N.	16 E.	80.
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	7 N.	16 E.	40.
N. $\frac{1}{4}$	22	7 N.	16 E.	320.
W. $\frac{1}{4}$ of SE. $\frac{1}{4}$	22	7 N.	16 E.	80.
SW. $\frac{1}{4}$	22	7 N.	16 E.	160.
Total area				960.
Occupied by railroad				11.7

Tract 87 lies across the central part of a low anticlinal fold. In the southern part the dip is toward the southwest, while in the northern part it is toward the northwest; in both cases at low angles. The coal crops out in the extreme eastern border, very near the center of the east side of section 22, dipping west 1° to 2° . This tract is entirely underlain by coal.

Total area unleased segregated coal lands:

	Acres.
Massey division	7,022.15
McCurtain division	72,811.01

Total McCurtain-Massey district..... 79,833.16

DEPARTMENT OF THE INTERIOR,

OFFICE OF INDIAN AFFAIRS,

Washington, D. C., June 21, 1904.

Circular No. 4 of coal and asphalt lands in McCurtain-Massey district (No. 4) is respectfully returned to the Secretary of the Interior with recommendation that it be approved.

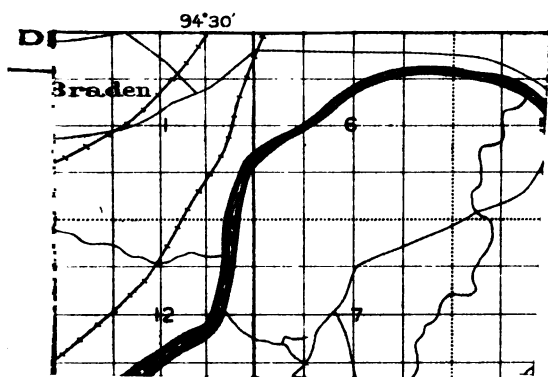
A. C. TONNER,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,

Washington, D. C., June 24, 1904.

Approved.

E. A. HITCHCOCK, *Secretary.*



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DEPARTMENT OF THE INTERIOR

LAND DISTRICT

(SHEET)

TERRITORY

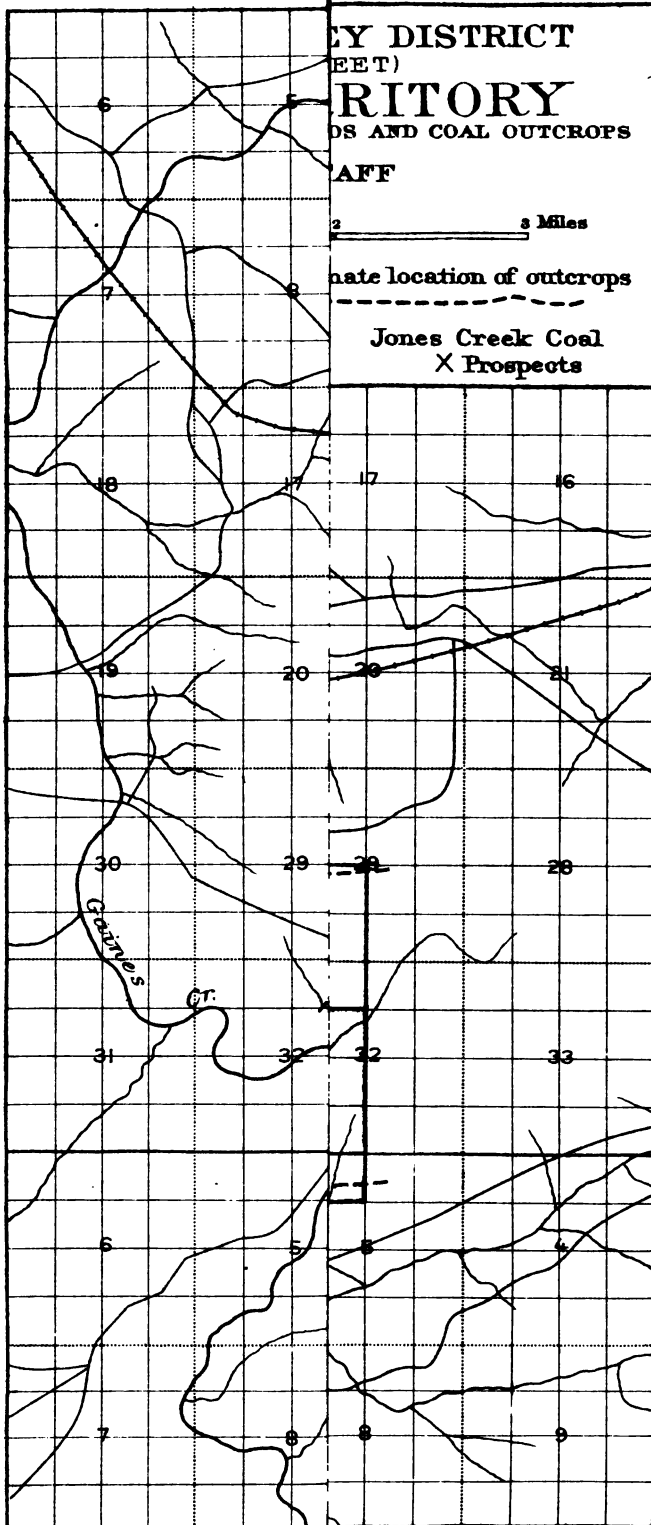
LANDS AND COAL OUTCROPS

OFFICE

Scale 0 2 3 Miles

Indicate location of outcrops

Jones Creek Coal
X Prospects



T. 7 N.

Tract	Acres
80	401.02
81	871.26
82	949.87
83	960.00
84	960.00
85	960.00
86	960.00
87	960.00

T. 6 N.

From U. S. Geol. Survey Map

R. 17 E.

DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 5.

MAPS OF SEGREGATED COAL LANDS

IN THE

LEHIGH-ARDMORE DISTRICTS, CHOCTAW AND CHICKASAW
NATIONS, INDIAN TERRITORY,

WITH

DESCRIPTIONS OF THE
UNLEASED SEGREGATED COAL LANDS.

BY

JOSEPH A. TAFF.

Bids for the purchase of tracts within this district will be opened by the Commissioner of Indian Affairs at his office in Washington, at 2 o'clock p. m. (eastern time) on Monday, June 5, 1905.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1904.

DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 5.

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ILLUSTRATIONS.

Map of Lehigh district, Choctaw Nation, Ind. T., showing segregated coal lands and coal outcrops	At end
Map of Ardmore district, Chickasaw Nation, Ind. T., showing segregated coal lands and coal outcrops.....	At end

LETTER OF TRANSMITTAL.

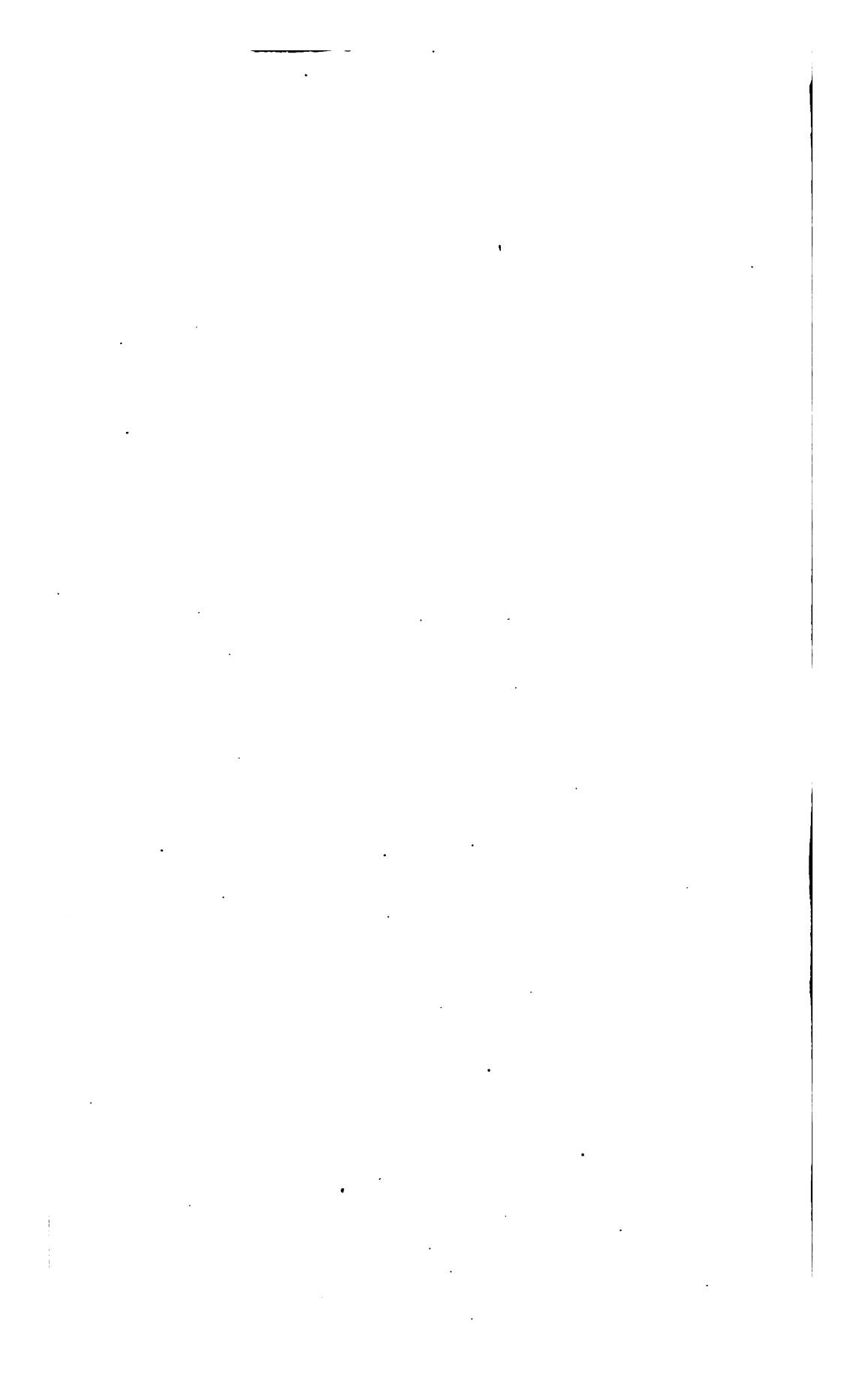
DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., June 18, 1904.

SIR: I have the honor to transmit herewith descriptive texts on the unleased segregated coal lands in the Lehigh-Ardmore districts, Choctaw and Chickasaw nations, Ind. T., prepared by Mr. Joseph A. Taff, in accordance with instructions contained in your letter of May 16, 1904. It is proposed that this report be published as Circular No. 5, for the information of those submitting bids in the fifth sale of unleased segregated coal lands.

Very respectfully,

CHAS. D. WALCOTT,
Director.

HON. E. A. HITCHCOCK,
Secretary of the Interior.



DESCRIPTION OF UNLEASED SEGREGATED COAL LANDS IN THE LEHIGH-ARDMORE DISTRICTS, CHOCTAW AND CHICK- SAW NATIONS, INDIAN TERRITORY.

LEHIGH DISTRICT, CHOCTAW NATION.

INTRODUCTORY REMARKS.

The Lehigh district contains two workable coal beds known as the Lehigh and Atoka coals. The Atoka coal, which is the lower of these two beds, is believed to occupy approximately the same position in the rocks as the Hartshorne coal, while the Lehigh coal may be correlated with that of the McAlester in geologic position.

The rocks containing these coal beds are exposed from the Savanna district southwest, through the east and southeast sides of the Lehigh district. The outcrops of the Hartshorne and McAlester coal beds, however, can not be traced from one district to the other on account of the highly disturbed condition of the rocks on the east side of the Lehigh basin, and, in consequence, the exact correlation of the coal beds of the two districts can not be accurately determined.

The United States Geological Survey began the survey of the Choctaw coal field in 1897, starting at the west end. When the work had progressed to the east end of what is known as the McAlester district a report on the economic features of the coal entitled "The Geology of the McAlester-Lehigh Coal Field," was published in Part III of the Nineteenth Annual Report, in 1899. In this work the entire field of the McAlester and Lehigh districts was carefully surveyed, the outcrops of the coal beds as well as other formations were traced and their structure and positions beneath the surface determined to close approximations. In 1902, after nearly the whole of the Choctaw coal field had been surveyed, a summary of the knowledge of the coal in Indian Territory, Arkansas, and Texas, entitled "The Southwestern Coal Field," was published in Part III of the Twenty-second Annual Report of the Survey, in 1900-1901.

In the surveys incident to the segregation of the coal lands the coal outcrops were retraversed and examined in the light of later mining developments. In this work investigations were made of the Ardmore coal.

Revision of previous locations and the extensions or the projections of new lines of railroad is, according to law, under the jurisdiction of

the United States courts of Indian Territory. Any changes of existing lines or the building of new railroads on the segregated coal lands since March, 1903, have no authentic record in the Department of the Interior further than a map showing the plan of the proposed changes or projections proposed.

CONDITIONS GOVERNING THE CLASSIFICATION OF COAL BEDS.

In the selection of these lands for segregation and sale the following criteria were considered of essential importance:

1. The coal should be of a quality and hardness to demand its use for commercial purposes.
2. It should be thick enough to be worked successfully.
3. Its structure or position and depth in the earth should assure profitable mining.

In the description of each tract or lease only those coal beds are considered to which the above qualifications can be applied.

In some coal regions it is found that certain coal beds are variable in thickness or quality or that both the thickness and quality are matters of uncertainty within short distances. It has been found that all beds of coal as well as other rocks are variable in thickness and composition within wide range.

The rocks in the Lehigh district are folded in such a manner that the coal beds come to the surface or crop out in long stretches and the thickness and quality of the beds have been proved by prospecting or by mining throughout a large part of the surface occurrence. The folding of the strata also causes the coal to extend to depths reaching the limit of practical mining within a few miles at farthest from the outcrops of the beds. It is presumed that if particular beds of coal have a known variation both in quality and thickness in various directions along outcrops as is the case with the Lehigh and Atoka beds, the same will be equally permanent within a few miles from the outcrop.

Locally variable thin beds of coal have been reported by prospectors to occur at several places in the district. The coal in these beds can not be profitably worked at present and will not be in demand until a time when the thicker beds are exhausted. This time is so indefinitely distant in the future that their presence is not considered to add any value to the lands.

DESCRIPTION OF THE COAL BEDS.

LEHIGH COAL.

The Lehigh coal throughout the district, so far as known, ranges in thickness from less than 4 feet to about 7 feet. An average thickness, it is estimated, is approximately 5 feet. It is reported clear of shaly

impurities and has shales for roof and floor. It has been extensively mined at Coalgate, Phillips, and Lehigh, so that the quality of the coal and its availability is well known. The composition of the Lehigh coal is shown by the following proximate analysis of coal taken from mine No. 5 at Lehigh:

Proximate analysis of Lehigh coal.

[Average run of mine.]		Per cent.
Moisture.....		3.56
Volatile combustible matter.....		41.61
Fixed carbon.....		41.12
Ash.....		13.71
Sulphur.....		4.56
Phosphorus.....		.024

The coal was selected from a number of cars coming from different parts of the mine, and it is believed that the above analysis represents an average composition of the Lehigh coal. The action of the coal in the analysis indicated that it can most likely be successfully coked, but the percentage of sulphur is too great for it to be successfully utilized for metallurgical purposes.

ATOKA COAL.

The Atoka coal has been prospected very extensively, but its mining has been carried on only to a limited amount. Neither its quality nor the extent of its occurrence is as well known as that of the Lehigh coal. The coal, so far as known, is approximately 4 feet in thickness and generally clear of shaly impurities. Its physical characteristics indicate that it is of approximately the same grade as the Lehigh coal. It contains some sulphur, and is apparently of about the same hardness.

The rock immediately overlying the coal is a hard, slaty shale, which makes a fairly good roof. The floor consists of compact clay.

STRUCTURE OF THE LEHIGH DISTRICT.

The coal of the Lehigh district lies in a wide oval basin in the central and southern parts, and in the sides of an upward or anticlinal fold in the northwest side. The downward fold is known as the Lehigh basin, and is named for the mining town located on the west side. It is broad and deep in the central part opposite Lehigh, and is much contracted in the northeast end. In the east side of this basin extending across the eastern part of T. 1 S., R. 11 E., and the southeast part of T. 1 N., R. 12 E., the coal and associated rocks are so steeply folded and disturbed that the coal is considered to be of little value, and has not been included in the segregated lands. In the south end and west side, however, the coal beds are well disposed structurally, and the coal outcrop can be easily traced and successfully mined.

The upward fold extends in a northeast-southwest direction through the town of Coalgate and parallel with the northwest side of the district, and is known as the Coalgate anticlinal fold. From Coalgate northeastward the coal pitches downward at a low angle to rise again to the surface near the eastern border of T. 1 N., R. 10 E. From the border of this township to the northeast corner of T. 1 N., R. 11 E., the coal crops in a long oval around the axial part of the upward fold. Farther toward the northeast the coal pitches in a low slope to the northeast corner of the district. From Coalgate southwestward the anticlinal fold becomes broad and low, the coal in the north side cropping in a southwesterly direction. In the other side it strikes south through Phillips and Lehigh.

Both the Lehigh and Atoka coals crop out at the southern end and southwest side of the Atoka basin, but only the Lehigh comes to the surface in the Coalgate anticlinal fold in the northwest side of the district. In the south side of this upward fold the coal approaches the surface at angles varying from 10° to 20° , except very near the town of Coalgate, where it is somewhat lower. In the northwest side, however, the coal is steeply inclined and can be exploited most economically by slope mining.

DESCRIPTION OF TRACTS, LEHIGH DISTRICT.

TRACT NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	11	2 S.	10 E.	160
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{2}$	12	2 S.	10 E.	80
W. $\frac{1}{2}$	12	2 S.	10 E.	320
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	13	2 S.	10 E.	40
NW. $\frac{1}{4}$	13	2 S.	10 E.	160
NE. $\frac{1}{4}$	14	2 S.	10 E.	160
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	14	2 S.	10 E.	40
Total area				960

This tract contains only the Atoka coal, which crops out along the southern border, dipping toward the northeast at about 10° . The inclination of the coal bed decreases slightly toward the northeast until the coal reaches a depth of 600 to 700 feet in the northeast corner. The tract contains approximately 890 acres of coal.

TRACT NO. 2

	Section.	Township.	Range.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	12	2 S.	10 E.	160.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of E. $\frac{1}{2}$	12	2 S.	10 E.	80.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	13	2 S.	10 E.	80.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	13	2 S.	10 E.	40.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	7	2 S.	11 E.	160.00
Lots 1, 2, 3, and 4	7	2 S.	11 E.	158.76
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	2 S.	11 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	18	2 S.	11 E.	80.00
Lots 1 and 2	18	2 S.	11 E.	79.52
Total area				878.28

The coal in this tract occurs under practically the same conditions of structure as found in tract No. 1, and the coal crops out in an east-west direction along the southern border. The tract contains about 850 acres of coal.

TRACT NO. 3.

	Section.	Township.	Range.	Acres.
Lots 1 and 2	1	2 S.	10 E.	79.97
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	2 S.	10 E.	80.00
S. $\frac{1}{2}$	1	2 S.	10 E.	320.00
Lots 3, 4, 5, 6, and 7	6	2 S.	11 E.	197.03
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	2 S.	11 E.	40.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	2 S.	11 E.	80.00
SE. $\frac{1}{4}$	36	1 S.	10 E.	160.00
Total area				957.00
Occupied by railroad				7.21

The leased land of the St. Louis and Galveston Coal and Mining Company lies between tract No. 3 and the outcrop of the Atoka coal, which it contains. The coal is at a depth of nearly 400 feet in the east end of the tract, dipping toward the northeast from 3° to 5° . In the northeast corner of the tract the coal reaches a depth of, approximately, 1,200 feet. The Lehigh coal crosses the northeast corner of the tract, giving an area of about 66 acres.

TRACT NO. 4.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 3 and 4.....	1	2 S.	10 E.	79.91
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	1	2 S.	10 E.	80.00
Lots 1, 2, 3, and 4.....	2	2 S.	10 E.	157.96
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	2	2 S.	10 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	2	2 S.	10 E.	80.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	2 S.	10 E.	40.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	2 S.	10 E.	40.00
Lot 1.....	3	2 S.	10 E.	39.07
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	2 S.	10 E.	40.00
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	35	1 S.	10 E.	160.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	36	1 S.	10 E.	80.00
Total area.....				956.94

Tract No. 4 contains only the Atoka coal. It is separated from the outcrop by the leased lands of the St. Louis and Galveston Coal and Mining Company. The coal in the southwest corner of the tract is at a depth approximately of 250 feet.

TRACT NO. 5.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 2, 3, and 4.....	5	2 S.	11 E.	119.87
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	2 S.	11 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	2 S.	11 E.	80.00
SW. $\frac{1}{4}$	5	2 S.	11 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	2 S.	11 E.	80.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	6	2 S.	11 E.	80.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	6	2 S.	11 E.	40.00
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	2 S.	11 E.	80.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	8	2 S.	11 E.	80.00
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	32	1 S.	11 E.	160.00
Total area.....				919.87
Occupied by railroad.....				16.39

Tract No. 5 contains the Lehigh coal, which outcrops in a north-west-southeast direction across the southwest side parallel with the railroad and about 500 to 600 feet east of it. The dip of the coal is toward the northeast at about 10° . The tract contains about 770 acres of coal.

TRACT NO. 6.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	6	2 S.	11 E.	40.00
E. $\frac{1}{2}$	7	2 S.	11 E.	320.00
SW. $\frac{1}{4}$	8	2 S.	11 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	8	2 S.	11 E.	80.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	2 S.	11 E.	40.00
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	17	2 S.	11 E.	80.00
NE. $\frac{1}{4}$	18	2 S.	11 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	2 S.	11 E.	80.00
Total area.....				960.00
Occupied by railroad.....				2.85

Tract No. 6 contains only the Atoka coal, which outcrops in an east-west direction across the extreme southern border, dipping toward the north at about 7° . There are very slight changes of dip toward the north, and the coal reaches a depth of, approximately, 1,200 feet in the north end. The tract contains about 940 acres of coal.

TRACT NO. 7.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 2, 3, and 4.....	4	2 S.	11 E.	119.56
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	2 S.	11 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	4	2 S.	11 E.	80.00
SW. $\frac{1}{4}$	4	2 S.	11 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	2 S.	11 E.	80.00
Lot 1.....	5	2 S.	11 E.	39.93
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	2 S.	11 E.	40.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	2 S.	11 E.	80.00
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	2 S.	11 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	2 S.	11 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	2 S.	11 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	1 S.	11 E.	40.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	1 S.	11 E.	80.00
Total area.....				959.49
Occupied by railroad.....				2.25

Tract No. 7 contains the Lehigh coal, and its dip is toward the north at about 10° . The coal crops out near the southern border. There are approximately 900 acres of coal in this tract. The Atoka coal

bed underlies the tract, but at a depth of 1,160 to 1,200 feet at the shallowest point in the south end of the tract.

TRACT NO. 8.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	8	2 S.	11 E.	160.00
SW. $\frac{1}{4}$	9	2 S.	11 E.	160.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	2 S.	11 E.	40.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	2 S.	11 E.	40.00
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	2 S.	11 E.	40.00
NW. $\frac{1}{4}$	16	2 S.	11 E.	160.00
NE. $\frac{1}{4}$	17	2 S.	11 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	2 S.	11 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	2 S.	11 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	17	2 S.	11 E.	80.00
Total area				960.00
Occupied by railroad				7.57

Tract No. 8 contains the Atoka coal, which crops out near the southern and southeastern borders, dipping toward the north and northwest at 10° to 20° . The tract contains about 920 acres of coal.

TRACT NO. 9.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4	3	2 S.	11 E.	159.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	2 S.	11 E.	40.00
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	2 S.	11 E.	40.00
SW. $\frac{1}{4}$	3	2 S.	11 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	3	2 S.	11 E.	80.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	4	2 S.	11 E.	80.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	2 S.	11 E.	40.00
Lot 1	4	2 S.	11 E.	39.76
NE. $\frac{1}{4}$	9	2 S.	11 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	9	2 S.	11 E.	80.00
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	9	2 S.	11 E.	40.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	2 S.	11 E.	40.00
Total area				958.76
Occupied by railroad				6.12

Tract No. 9 contains both the Atoka and Lehigh coal beds. The former crops out near the southeastern border and the latter near the

center, both in a northeast-southwest direction. The dip of the Atoka coal is from 20° to 80° at the outcrop, while that of the Lehigh is 20° to 30° . The dips decrease toward the northwest, reaching approximately 20° in the northwest corner. The Atoka bed underlies about 830 acres of the tract, and the area of the Lehigh coal will not exceed 300 acres.

TRACT NO. 10.

	Section.	Township.	Range.	Acres.
SW. $\frac{1}{4}$	5	1 S.	10 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	1 S.	10 E.	80.00
Lots 3 and 4	5	1 S.	10 E.	86.00
Lots 1 and 2	6	1 S.	10 E.	85.56
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	1 S.	10 E.	80.00
SE. $\frac{1}{4}$	6	1 S.	10 E.	160.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	1 S.	10 E.	40.00
NE. $\frac{1}{4}$	7	1 S.	10 E.	160.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	1 S.	10 E.	80.00
Total area				931.56

Tract No. 10 contains only the Atoka coal, which crops out near the southwest corner, dipping toward the northeast at about 8° . The tract contains approximately 900 acres of coal.

TRACT No. 11.

	Section.	Township.	Range.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	7	1 S.	10 E.	40
N. $\frac{1}{2}$	8	1 S.	10 E.	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	8	1 S.	10 E.	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	1 S.	10 E.	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	8	1 S.	10 E.	40
SW. $\frac{1}{4}$	9	1 S.	10 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	1 S.	10 E.	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	1 S.	10 E.	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	1 S.	10 E.	40
Total area				960

The Atoka coal in tract No. 11 occurs under practically the same conditions of structure as found in tract No. 10, except that the coal dips at about 6° and in a more easterly direction. There are, approximately, 920 acres of coal in the tract.

TRACT NO. 12.

	Sec- tion.	Town- ship.	Range.	Acres.
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	1 S.	10 E.	40.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	4	1 S.	10 E.	80.00
SW. $\frac{1}{4}$	4	1 S.	10 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	1 S.	10 E.	80.00
Lot 4	4	1 S.	10 E.	43.83
Lots 1 and 2	5	1 S.	10 E.	87.12
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	1 S.	10 E.	80.00
SE. $\frac{1}{4}$	5	1 S.	10 E.	160.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	1 S.	10 E.	160.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	1 S.	10 E.	40.00
Total area				930.95

The Atoka coal underlies the entire tract. It dips toward the north-east and is at a depth of 400 to 500 feet in the southwest corner.

TRACT NO. 13.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	9	1 S.	10 E.	80
SE. $\frac{1}{4}$	9	1 S.	10 E.	160
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	1 S.	10 E.	40
SW. $\frac{1}{4}$	10	1 S.	10 E.	160
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	1 S.	10 E.	40
N. $\frac{1}{2}$	15	1 S.	10 E.	320
NE. $\frac{1}{4}$	16	1 S.	10 E.	160
Total area				960

The Atoka coal lies entirely beneath the surface and is at a depth of approximately 500 feet in the southwest corner. The dip is toward the northeast about 3°.

TRACT NO. 14.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{4}$	16	1 S.	10 E.	320
E. $\frac{1}{2}$ of E. $\frac{1}{4}$	17	1 S.	10 E.	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	1 S.	10 E.	40
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	1 S.	10 E.	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	1 S.	10 E.	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	20	1 S.	10 E.	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	1 S.	10 E.	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	1 S.	10 E.	80
NW. $\frac{1}{4}$	21	1 S.	10 E.	160
Total area.....				960

The Atoka coal outcrops across the west end of this tract, dipping toward the east-northeast about 5° . The tract has an area of about 940 acres of coal.

TRACT NO. 15.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	15	1 S.	10 E.	320
SE. $\frac{1}{4}$	16	1 S.	10 E.	160
NE. $\frac{1}{4}$	21	1 S.	10 E.	160
N. $\frac{1}{2}$	22	1 S.	10 E.	320
Total area.....				960

The Atoka coal is entirely beneath the surface in this tract and lies at a depth of about 400 feet in the southwest corner. The dip is prevailing toward the northeast from 3° to 5° .

TRACT NO. 16.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	22	1 S.	10 E.	320.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	23	1 S.	10 E.	80.00
SW. $\frac{1}{4}$	23	1 S.	10 E.	160.00
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	1 S.	10 E.	80.00
NW. $\frac{1}{4}$	26	1 S.	10 E.	160.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	27	1 S.	10 E.	160.00
Total area.....				960.00
Occupied by railroad				2.34

The coal in tract No. 16 occurs under practically the same conditions as tract No. 15. The coal beneath the southwest corner is at a depth of about 450 feet. The Lehigh coal crops out across the northeast corner and has an area in the tract approximating 15 acres.

TRACT NO. 17.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	1 S.	10 E.	40
SE. $\frac{1}{4}$	21	1 S.	10 E.	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	1 S.	10 E.	80
All of.....	28	1 S.	10 E.	640
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	29	1 S.	10 E.	40
Total area.....				960

The Atoka coal outcrops along the extreme western border dipping toward the east from 3° to 5° . This tract contains approximately 910 acres of coal.

TRACT NO. 18.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	27	1 S.	10 E.	160
S. $\frac{1}{2}$	27	1 S.	10 E.	320
E. $\frac{1}{2}$	34	1 S.	10 E.	320
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	1 S.	10 E.	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	1 S.	10 E.	80
Total area.....				920

Tract No. 18 is separated from the outcrop of the Atoka coal, which is at a depth of about 200 feet beneath the southwest corner. The dip of the coal is toward the northeast, between 3° and 5° .

TRACT NO. 19.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	1 S.	10 E.	80
SW. $\frac{1}{4}$	26	1 S.	10 E.	160
N. $\frac{1}{2}$	35	1 S.	10 E.	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	35	1 S.	10 E.	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	36	1 S.	10 E.	80
NW. $\frac{1}{4}$	36	1 S.	10 E.	160
Total area.....				960

The Atoka coal is entirely beneath the surface and at a depth of about 400 feet in the southwest corner. The dip is toward the northeast from 3° to 5° .

TRACT NO. 20.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 2, 3, and 4.....	5	1 S.	11 E.	134. 61
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	5	1 S.	11 E.	160. 00
S. $\frac{1}{2}$	5	1 S.	11 E.	320. 00
Lots 1 and 2.....	6	1 S.	11 E.	90. 09
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	1 S.	11 E.	80. 00
SE. $\frac{1}{4}$	6	1 S.	11 E.	160. 00
Total area.....				944. 70

Tract No. 20 contains the Lehigh coal, which is entirely beneath the surface. The tract is separated from the outcrop of the coal by

the leased lands of the Atoka Coal Mining Company. The coal is at an estimated depth of 1,200 feet in the west end of the tract, where the dip is at an angle of 10° to 15° . The inclination of the coal decreases slightly toward the east.

TRACT NO. 21.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	7	1 S.	11 E.	320
All of.....	8	1 S.	11 E.	640
Total area.....				960

Tract No. 21 contains the Lehigh coal, and it occurs under practically the same conditions as described for tract No. 20, except that the coal is at an estimated depth of 1,100 feet in the southwest corner.

TRACT NO. 22.

	Sec- tion.	Town- ship.	Range.	Acres.
N. $\frac{1}{2}$	17	1 S.	11 E.	320.00
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	17	1 S.	11 E.	160.00
NE. $\frac{1}{4}$	18	1 S.	11 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	1 S.	11 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	1 S.	11 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	18	1 S.	11 E.	80.00
Lots 1, 2, and 3.....	18	1 S.	11 E.	117.68
Total area.....				957.68

Tract No. 22 contains the Lehigh coal, and it occurs under practically the same conditions as described for tract No. 20, except that the coal in the southwest corner is at a depth of 600 feet. The dip of the coal in the western part is between 5° and 10° , increasing to about 15° in the northeast corner.

TRACT NO. 23.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	17	1 S.	11 E.	160.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	1 S.	11 E.	80.00
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	1 S.	11 E.	40.00
Lot 4	18	1 S.	11 E.	39.80
NE. $\frac{1}{4}$	19	1 S.	11 E.	160.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	1 S.	11 E.	80.00
Lots 1 and 2	19	1 S.	11 E.	79.58
N. $\frac{1}{2}$	20	1 S.	11 E.	320.00
Total area				959.38

Tract No. 23 contains the Lehigh coal, and it occurs under practically the same conditions as described for tract No. 22, except that the coal is at a depth of nearly 500 feet in the southwest corner. The dip of the coal in the eastern part of the tract does not exceed 10° .

TRACT NO. 24.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	19	1 S.	11 E.	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	1 S.	11 E.	80
S. $\frac{1}{2}$	20	1 S.	11 E.	320
N. $\frac{1}{2}$	29	1 S.	11 E.	320
N. $\frac{1}{2}$ of N. $\frac{1}{2}$ of S. $\frac{1}{2}$	29	1 S.	11 E.	80
Total area				960

Tract No. 24 contains the Lehigh coal, and it occurs under practically the same conditions as described for tract No. 23, and the coal is at a depth of approximately 500 feet in the west end.

TRACT NO. 25.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	28	1 S.	11 E.	80
S. $\frac{1}{2}$ of N. $\frac{1}{2}$ of S. $\frac{1}{2}$	29	1 S.	11 E.	80
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	29	1 S.	11 E.	160
N. $\frac{1}{2}$	32	1 S.	11 E.	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	32	1 S.	11 E.	160
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	1 S.	11 E.	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	33	1 S.	11 E.	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	33	1 S.	11 E.	40
Total area.....				960

Tract No. 25 contains the Lehigh coal, which is at an estimated depth of 500 feet in the southwest corner, dipping toward the northeast at about 10°. The inclination of the coal varies but little throughout the tract.

TRACT NO. 26. PARCEL NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	1	1 S.	9 E.	160.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	1	1 S.	9 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	1 S.	10 E.	40.00
Lots 6 and 7.....	6	1 S.	10 E.	70.28
Lot 1.....	7	1 S.	10 E.	34.87
Total area.....				385.15
Occupied by railroad.....				3.27

This parcel contains only the Atoka coal, which crops near the southwest side, dipping toward the northeast about 8°. The area of coal is nearly 330 acres.

TRACT NO. 26. PARCEL NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	1 N.	10 E.	40.00
NE. $\frac{1}{4}$	31	1 N.	10 E.	160.00
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	1 N.	10 E.	80.00
E. $\frac{1}{4}$ of W. $\frac{1}{2}$	31	1 N.	10 E.	160.00
Lots 2, 3, and 4	31	1 N.	10 E.	119.66
Total area				559.66
Occupied by railroad				14.97

Parcel No. 2 contains the Lehigh coal, which lies upon the northwest side of the Coalgate anticline. It crops out along the southeast side, dipping toward the northwest at 20 to 30°. The dips decrease slightly toward the northwest, reaching about 15° on the northwest side. Parcel No. 2 contains about 480 acres of coal.

Total area of tract, 944.81 acres; total railroad, 18.24 acres.

TRACT NO. 27, PARCEL NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	1 N.	10 E.	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	21	1 N.	10 E.	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	22	1 N.	10 E.	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	22	1 N.	10 E.	80
Total area				240

The coal in this parcel is entirely beneath the surface. The parcel is separated from the outcrop by leased lands. The dip is toward the northwest, at about 40°.

TRACT NO. 27, PARCEL NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	1 N.	10 E.	40

Parcel No. 2 contains the Lehigh coal, which outcrops in a northeast-southwest direction near the center, dipping toward the northwest at about 35°. The parcel contains about 25 acres of coal.

TRACT NO. 27, PARCEL NO. 3.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	1 N.	10 E.	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	29	1 N.	10 E.	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	1 N.	10 E.	80
S. $\frac{1}{2}$	29	1 N.	10 E.	320
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	1 N.	10 E.	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	1 N.	10 E.	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	1 N.	10 E.	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	1 N.	10 E.	80
Total area.....				680

Parcel No. 3 contains the Lehigh coal, which crops out along the southeast side, dipping toward the northwest 25 to 35°. The inclination of the coal decreases northwestward, reaching about 15° in the northwest side. The area of coal is approximately 640 acres.

Occupied by railroad, 15.45 acres; total area of tract, 960 acres.

TRACT NO. 28, PARCEL NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	1 N.	10 E.	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	11	1 N.	10 E.	80
SW. $\frac{1}{4}$	12	1 N.	10 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	12	1 N.	10 E.	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	1 N.	10 E.	40
NE. $\frac{1}{4}$	14	1 N.	10 E.	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	14	1 N.	10 E.	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	14	1 N.	10 E.	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	15	1 N.	10 E.	40
Total area.....				720
Occupied by cemetery ^a				5

^a Only the deposits of coal or asphalt in or under the land will be sold.

Parcel No. 1 lies in the northwest side of the Coalgate anticline. In the southeast corner of the northeast quarter of section 14 the coal is at an estimated depth of 500 feet, dipping toward the northwest at 20° to 25°. The inclination decreases toward the northwest, reaching approximately 10° in the northwest side.

TRACT NO. 28, PARCEL NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
Lands outside of Coalgate townsite:				
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	1 N.	10 E.	20.00
N. $\frac{1}{2}$ of N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	1 N.	10 E.	2.50
Total				22.50
Lands inside of Coalgate town site (only the deposits of coal or asphalt in or under the land will be sold).				
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	1 N.	10 E.	10.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	1 N.	10 E.	5.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	1 N.	10 E.	2.50
Total				17.50

Parcel No. 2 contains the Lehigh coal, which crops out in a north-south direction near the west side, dipping at a low angle toward the northeast. Some mining has been done in this land, but it is not known what amount of coal has been removed. The parcel originally contained, approximately, 35 acres of coal.

Total area of tract, 760 acres.

TRACT NO. 29.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	24	1 N.	10 E.	80.00
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	25	1 N.	10 E.	160.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	1 N.	10 E.	80.00
N. $\frac{1}{2}$ of S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	1 N.	10 E.	40.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	1 N.	11 E.	80.00
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	1 N.	11 E.	40.00
Lots 3 and 4.....	19	1 N.	11 E.	71.35
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	30	1 N.	11 E.	160.00
Lots 1, 2, 3, and 4	30	1 N.	11 E.	145.24
W. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	1 N.	11 E.	40.00
Total area				896.59

Tract No. 29 contains the Lehigh coal, and is situated in the south-east side of the Coalgate anticline. In the southern part of the tract the coal dips toward the east, while in the northern part the dip is toward the southeast at angles between 10° and 20° . The tract is separated from the outcrop of the coal by the leased lands of the South-western Development Company. The coal is at an estimated depth of 800 feet near the eastern border of the tract.

TRACT NO. 30.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	1	1 N.	10 E.	80.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	1 N.	11 E.	40.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	1 N.	11 E.	80.00
SW. $\frac{1}{4}$	5	1 N.	11 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	1 N.	11 E.	80.00
SE. $\frac{1}{4}$	6	1 N.	11 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	1 N.	11 E.	80.00
Lots 3 and 4	6	1 N.	11 E.	68.88
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	1 N.	11 E.	40.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	1 N.	11 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	8	1 N.	11 E.	80.00
Total area				908.88
Occupied by railroad				9.96

The Lehigh coal in this tract crops out across the extreme south end, dipping toward the northwest at 25° to 30° . The dip of the coal will vary to some extent throughout the tract but will not be found to decrease materially below that found along the outcrop. The tract contains, approximately, 890 acres of coal.

TRACT NO. 31.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4	4	1 N.	11 E.	153.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	4	1 N.	11 E.	80.00
S. $\frac{1}{2}$	4	1 N.	11 E.	320.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	1 N.	11 E.	80.00
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	1 N.	11 E.	40.00
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	1 N.	11 E.	80.00
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	1 N.	11 E.	40.00
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	9	1 N.	11 E.	40.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	1 N.	11 E.	80.00
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	2 N.	11 E.	40.00
Total area				953.00
Occupied by railroad				15.87

The coal in this tract occurs under practically the same conditions as found in tract No. 30. The tract contains about 915 acres of coal.

TRACT NO. 32, PARCEL NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, 3, and 4	3	1 N.	11 E.	153.36
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	3	1 N.	11 E.	160.00
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	1 N.	11 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	2 N.	11 E.	80.00
SE. $\frac{1}{4}$	34	2 N.	11 E.	160.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	2 N.	11 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	2 N.	11 E.	40.00
Total area				753.36
Occupied by railroad				14.69

The coal in this parcel of land occurs under practically the same conditions as found in tract No. 31. It has an area of approximately 710 acres of coal.

TRACT NO. 32, PARCEL NO. 2.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 3 and 4	1	1 N.	11 E.	79.58

The Lehigh coal crops out across near the center of this land, dipping toward the north. It has an area of about 30 acres of coal.

Total area of tract, 832.94 acres.

TRACT NO. 33.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	1 N.	11 E.	80.
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	1 N.	11 E.	40
SW. $\frac{1}{4}$	20	1 N.	11 E.	160
W. $\frac{1}{2}$	29	1 N.	11 E.	320
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	30	1 N.	11 E.	160
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	1 N.	11 E.	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	1 N.	11 E.	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	1 N.	11 E.	40
N. $\frac{1}{2}$ of N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	1 N.	11 E.	40
Total area				960

The Lehigh coal in tract No. 33 lies entirely beneath the surface and dips toward the southeast at 10° to 25° . In the northwest corner of the tract the coal is at a depth of about 800 feet.

TRACT NO. 34.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	1 N.	11 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	1 N.	11 E.	80.00
SE. $\frac{1}{4}$	31	1 N.	11 E.	160.00
E. $\frac{1}{2}$	32	1 N.	11 E.	320.00
SW. $\frac{1}{4}$	32	1 N.	11 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	1 N.	11 E.	80.00
S. $\frac{1}{2}$ of N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	1 N.	11 E.	40.00
Lot 1	5	1 S.	11 E.	44.43
Total area				924.43

The coal in tract No. 34 occurs under practically the same conditions as in No. 32, except that the coal is at greater depths. It is at an estimated depth of 1,300 feet in the northwest corner. The dip of the coal in this tract is nearly east about 15° in the western part, and probably 10° in the eastern part.

TRACT NO. 35.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	16	1 N.	11 E.	160
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	16	1 N.	11 E.	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	1 N.	11 E.	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	1 N.	11 E.	80
E. $\frac{1}{2}$	20	1 N.	11 E.	320
W. $\frac{1}{2}$	21	1 N.	11 E.	320
Total area				960

The Lehigh coal crops out across the north end of tract No. 35, dipping toward the south at about 10° . The inclination of the coal varies but slightly through the tract. The area of coal is about 940 acres.

TRACT NO. 36.

	Sec- tion.	Town- ship.	Range.	Acres.
All of.....	28	1 N.	11 E.	640
E. $\frac{1}{2}$	29	1 N.	11 E.	320
Total area.....				960

The coal in tract No. 36 is entirely beneath the surface, and is at an estimated depth of 1,200 feet near the north side. The dip is toward the south at about 10° .

TRACT NO. 37.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	15	1 N.	11 E.	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	15	1 N.	11 E.	80
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	16	1 N.	11 E.	80
SE. $\frac{1}{4}$	16	1 N.	11 E.	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	16	1 N.	11 E.	40
E. $\frac{1}{2}$	21	1 N.	11 E.	320
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	22	1 N.	11 E.	80
NW. $\frac{1}{4}$	22	1 N.	11 E.	160
Total area.....				960

The Lehigh coal crops out very near the north border of this tract, dipping toward the south at approximately 10° . The inclination of the coal varies but slightly throughout the tract, which is entirely underlain by coal.

TRACT NO. 38.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	22	1 N.	11 E.	320
All of.....	27	1 N.	11 E.	640
Total area.....				960

The coal is entirely beneath the surface in tract No. 38 and is at an estimated depth of 1,200 feet in the north end. The dip is toward the south, varying from 30° in the southern part to 10° in the northern part.

TRACT NO. 39.

	Section.	Township.	Range.	Acres.
SW. $\frac{1}{4}$	13	1 N.	11 E.	160
SE. $\frac{1}{4}$	14	1 N.	11 E.	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	14	1 N.	11 E.	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	15	1 N.	11 E.	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	22	1 N.	11 E.	80
N. $\frac{1}{2}$	23	1 N.	11 E.	320
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	24	1 N.	11 E.	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	1 N.	11 E.	40
Total area.....				960

The coal is entirely beneath the surface in tract No. 39, and is at a depth of approximately 900 feet in the northwest corner. The dip is toward the south, varying from 10° to 16° .

TRACT NO. 40.

	Section.	Township.	Range.	Acres.
S. $\frac{1}{2}$	23	1 N.	11 E.	320
All of.....	26	1 N.	11 E.	640
Total area.....				960

Tract No. 40 lies nearly in the axial part of the Lehigh basin. The coal is entirely beneath the surface and inclined toward the south-southwest, at 3° to 10° . The coal in the north end is at an estimated depth of 1,200 feet.

TRACT NO. 41.

	Section.	Township.	Range.	Acres.
E. $\frac{1}{2}$	13	1 N.	11 E.	320.00
NE. $\frac{1}{4}$	24	1 N.	11 E.	160.00
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	18	1 N.	12 E.	160.00
Lots 1, 2, 3, and 4.....	18	1 N.	12 E.	149.76
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	1 N.	12 E.	80.00
Lots 1 and 2.....	19	1 N.	12 E.	74.93
Total area.....				944.69

Tract No. 41 lies across the axial part of the Lehigh basin, in the more contracted northeast end. In the northwest corner of the tract

the coal is at a depth of about 600 feet, dipping toward the southeast at probably 10° . In the central part of the tract the coal is practically flat, while in the southeastern part the dip is low to the northwest.

TRACT NO. 42.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$	24	1 N.	11 E.	320.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	1 N.	11 E.	40.00
N. $\frac{1}{2}$	25	1 N.	11 E.	320.00
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	1 N.	11 E.	40.00
N. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	1 N.	11 E.	80.00
Lots 3 and 4	19	1 N.	12 E.	74.71
Lots 1 and 2	30	1 N.	12 E.	74.83
Total area				949.54

Tract No. 42 lies in the axial part of the Lehigh basin, and the coal is inclined at low angles toward the southwest in the southwestern, central, and northeastern parts. In the northwestern part the dip is toward the south, while in the southeastern part it is toward the northwest. The coal is at an estimated depth of 1,000 to 1,200 feet in the northwest corner.

TRACT NO. 43.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	2 N.	11 E.	40.00
SE. $\frac{1}{4}$	25	2 N.	11 E.	160.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	2 N.	11 E.	80.00
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	2 N.	11 E.	40.00
E. $\frac{1}{2}$	30	2 N.	12 E.	320.00
E. $\frac{1}{4}$ of W. $\frac{1}{2}$	30	2 N.	12 E.	160.00
Lots 1, 2, 3, and 4	30	2 N.	12 E.	152.76
Total area				952.76
Occupied by railroad				17.09

Tract No. 43 lies upon the northwest side of the Coalgate anticline, the southeast corner being near the axis where the dip is about 12° toward the northwest. In the southeastern part of the tract the coal is at a depth of 600 to 800 feet.

TRACT NO. 44.

	Sec- tion.	Town- ship.	Range.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	20	2 N.	12 E.	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	2 N.	12 E.	80
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	28	2 N.	12 E.	160
All of	29	2 N.	12 E.	640
Total area				960

The coal in tract No. 44 occurs under practically the same conditions as in No. 43. The coal in the central and southeastern parts is at a depth of 600 to 900 feet. In the southeastern part of the tract the coal is practically flat, while in the central part the dip is toward the northwest at about 12° . In the northwest side the dip increases to probably 30° .

TRACT NO. 45.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	21	2 N.	12 E.	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	2 N.	12 E.	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	2 N.	12 E.	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	27	2 N.	12 E.	40
E. $\frac{1}{2}$	28	2 N.	12 E.	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	28	2 N.	12 E.	160
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	2 N.	12 E.	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	2 N.	12 E.	40
Total area				960

Tract No. 45 lies across the axial part of the Coalgate anticline. The dip in the northern part is toward the northwest, while in the southern part it is toward the southeast. In the central part of the tract the coal pitches toward the northeast and is estimated to be 800 to 900 feet beneath the surface.

TRACT NO. 46.

	Sec- tion.	Town- ship.	Range.	Acres.
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	22	2 N.	12 E.	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	22	2 N.	12 E.	80
SW. $\frac{1}{4}$	22	2 N.	12 E.	160
E. $\frac{1}{2}$	27	2 N.	12 E.	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	27	2 N.	12 E.	160
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	27	2 N.	12 E.	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	2 N.	12 E.	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	2 N.	12 E.	40
Total area.....				920

The coal in tract No. 46 occurs under practically the same conditions as found in No. 45. The axis of the fold crosses the northern part, where the coal is at a depth of about 900 feet. In the central part the dip is toward the southeast at 8° to 15° . The southeast corner approaches the axial part of the Lehigh syncline.

TRACT NO. 47.

	Sec- tion.	Town- ship.	Range.	Acres.
NE. $\frac{1}{4}$	31	2 N.	12 E.	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	2 N.	12 E.	80
N. $\frac{1}{2}$	32	2 N.	12 E.	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	32	2 N.	12 E.	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	2 N.	12 E.	80
NW. $\frac{1}{4}$	33	2 N.	12 E.	160
Total area.....				960

The eastern part of tract No. 47 lies upon the axial part of the Coalgate anticline, where the coal is at a depth of 500 to 600 feet, and pitches at a low angle toward the east. In the eastern part the dip is toward the southeast about 10° . Near the southwest corner the dip is toward the northwest between 10° and 15° .

TRACT NO. 48.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 3 and 4.....	5	1 N.	12 E.	76.98
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	1 N.	12 E.	80.00
SW. $\frac{1}{4}$	5	1 N.	12 E.	160.00
Lots 1 and 2.....	6	1 N.	12 E.	77.72
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	1 N.	12 E.	80.00
SE. $\frac{1}{4}$	6	1 N.	12 E.	160.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	7	1 N.	12 E.	80.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	8	1 N.	12 E.	80.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	2 N.	12 E.	80.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	2 N.	12 E.	80.00
Total area.....				954.70

The northwest corner of tract No. 48 is near the axial part of the Coalgate anticline, where the coal is estimated to be at a depth of 500 feet. The dip is toward the southeast in the northern part and toward the east near the west side. Near the southeast corner the coal becomes nearly flat where it approaches the axis of the Lehigh basin.

TRACT NO. 49.

	Sec- tion.	Town- ship.	Range.	Acres.
S.W. $\frac{1}{4}$	4	1 N.	12 E.	160.00
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	1 N.	12 E.	80.00
Lots 3 and 4.....	4	1 N.	12 E.	76.56
Lots 1 and 2.....	5	1 N.	12 E.	77.02
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	1 N.	12 E.	80.00
SE. $\frac{1}{4}$	5	1 N.	12 E.	160.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	1 N.	12 E.	80.00
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	1 N.	12 E.	80.00
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	2 N.	12 E.	80.00
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	2 N.	12 E.	80.00
Total area.....				953.58

The southeastern part of tract No. 49 lies across the axis of the Lehigh syncline. The dip near the southeast corner is toward the northwest about 25°. In the central part of the tract it is toward the southeast at about the same angle. In the northwestern part it is toward the southeast at about 10°. In the northwest corner of the tract the coal is at an estimated depth of 900 feet.

TRACT NO. 50.

	Sec- tion.	Town- ship.	Range.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	1 N.	12 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	3	1 N.	12 E.	40.00
Lot 4.....	3	1 N.	12 E.	37.64
Lots 1 and 2.....	4	1 N.	12 E.	75.60
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	4	1 N.	12 E.	80.00
SE. $\frac{1}{4}$	4	1 N.	12 E.	160.00
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	9	1 N.	12 E.	80.00
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	1 N.	12 E.	40.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	2 N.	12 E.	80.00
SE. $\frac{1}{4}$	33	2 N.	12 E.	160.00
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	2 N.	12 E.	80.00
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	2 N.	12 E.	40.00
Total area.....				953.24

Tract No. 50 lies entirely across the Lehigh syncline. In the central part of the tract the coal is practically flat. In the southeastern part the dip is toward the northwest at 25° to 30° , while the northwestern part dips toward the southeast from 10° to 20° . Near the northwest and southeast corners the coal is at a depth of approximately 800 feet.

TRACT NO. 51.

	Sec- tion.	Town- ship.	Range.	Acres.
Lots 1, 2, and 3.....	3	1 N.	12 E.	113.88
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	3	1 N.	12 E.	80.00
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	3	1 N.	12 E.	80.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	1 N.	12 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	3	1 N.	12 E.	40.00
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	1 N.	12 E.	80.00
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	2 N.	12 E.	80.00
SE. $\frac{1}{4}$	34	2 N.	12 E.	160.00
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	2 N.	12 E.	80.00
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	2 N.	12 E.	40.00
Total area.....				833.88

In tract No. 51 the coal occurs under practically the same conditions as found in No. 50, except that the dip in the southeastern part is toward the northwest at 50° to 60° . In the northern part the coal is nearly flat or slightly inclined toward the southeast. The outcrop of

the coal can not be accurately located without prospecting, but it is believed to extend across the south end within one-fourth of a mile north of the center of section 10, township 1 north, range 12 east.

TRACT NO. 52.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$	12	1 N.	11 E.	160.00
S. $\frac{1}{4}$ of NE. $\frac{1}{4}$	7	1 N.	12 E.	80.00
SE. $\frac{1}{4}$	7	1 N.	12 E.	160.00
E. $\frac{1}{4}$ of SW. $\frac{1}{4}$	7	1 N.	12 E.	80.00
Lots 3 and 4	7	1 N.	12 E.	74.86
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	7	1 N.	12 E.	40.00
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	1 N.	12 E.	40.00
W. $\frac{1}{4}$ of SE. $\frac{1}{4}$	8	1 N.	12 E.	80.00
SW. $\frac{1}{4}$	8	1 N.	12 E.	160.00
S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	1 N.	12 E.	80.00
Total area				954.86

The Lehigh coal in the northwest corner of tract No. 52 is at a depth of approximately 400 feet where the dip is toward the southeast at 10° to 15° . The inclination of the coal gradually decreases toward the southeast, becoming nearly flat in the central part. In the southeastern part of the tract the dip is toward the northwest at 15° to 25° .

TRACT NO. 53.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	1 N.	12 E.	40
E. $\frac{1}{4}$ of SE. $\frac{1}{4}$	8	1 N.	12 E.	80
S. $\frac{1}{4}$ of N. $\frac{1}{4}$	9	1 N.	12 E.	160
S. $\frac{1}{4}$	9	1 N.	12 E.	320
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	1 N.	12 E.	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	1 N.	12 E.	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	1 N.	12 E.	40
NW. $\frac{1}{4}$	16	1 N.	12 E.	160
E. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	1 N.	12 E.	80
Total area				960

Tract No. 53 lies in the southeast side of the Lehigh syncline. It is estimated that the coal crops out in a northeast-southwest direction near the southeastern border of the tract, dipping toward the northwest from 15° to 40° . The dip in the western part of the tract is vari-

able between 13° and 25° . The area of the coal in the tract can not be estimated, since the outcrop of the coal could not be accurately located.

TRACT NO. 54.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	1 N.	12 E.	80
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	17	1 N.	12 E.	160
W. $\frac{1}{2}$	17	1 N.	12 E.	320
E. $\frac{1}{2}$	18	1 N.	12 E.	320
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	20	1 N.	12 E.	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	1 N.	12 E.	40
Total area				960

The coal in this tract occurs under practically the same conditions as found in No. 53, except that the coal in the northwestern part becomes nearly flat as it approaches the axis of the Lehigh syncline. The coal is believed to crop out across the southeast corner in a northeast-southwest direction near the center of the SE. $\frac{1}{4}$ of section 17. The dip is from 13° to 15° toward the northwest.

TRACT NO. 55.

	Sec- tion.	Town- ship.	Range.	Acres.
E. $\frac{1}{2}$	19	1 N.	12 E.	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	1 N.	12 E.	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	1 N.	12 E.	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	1 N.	12 E.	80
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	20	1 N.	12 E.	160
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	29	1 N.	12 E.	40
NE. $\frac{1}{4}$	30	1 N.	12 E.	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	1 N.	12 E.	80
Total area				960

The coal in this tract occurs under practically the same conditions as found in tracts Nos. 53 and 54. The estimated outcrop of the coal has a more southerly bearing, and the dip is westward 15° to 20° .

Total area unleased segregated coal lands, Lehigh district, 51,832.51 acres.

ARDMORE DISTRICT, CHICKASAW NATION.

ARDMORE COAL.

But one coal bed of workable thickness is known in the Ardmore district, and this one occurs 2 to 6 miles southeast of the town of Ardmore. The line of its outcrop extends northwestward, approaching very near to the south boundary of the town. Near the southeast corner of T. 5 S., R. 2 E., the coal crop passes beneath thick deposits of sand.

The Ardmore coal, where mining has been carried on in leased lands near the southeast corner of sec. 8, T. 5 S., R. 2 E., is 3 feet 4 inches thick, and separated by a variable parting of shale 3 to 5 inches thick. The coal has been prospected at a number of places along the outcrop and its thickness reported to be practically as found in the mine.

The Ardmore coal has not been analyzed. In physical character it is closely related to that of the Lehigh coal, except that it is probably a little softer. In the folding of the strata the coal in the mine above referred to has been fractured and in places small fissures formed.

The rocks in the region of Ardmore are much folded, and it is believed that the geologic position of the Ardmore coal could be located at the surface northeast of its known occurrence, but its presence in workable thickness far from its known occurrence in any place can not be assumed.

The coal bed inclines toward the northeast at 23° to 25° near the outcrop. The dips decrease slightly as the bed is followed downward, but it will not attain a low inclination or flat position within the reach of practicable mining.

DESCRIPTION OF TRACT, ARDMORE DISTRICT.

TRACT NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	22	5 S.	2 E.	40
SE. $\frac{1}{4}$	22	5 S.	2 E.	160
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	22	5 S.	2 E.	40
S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	22	5 S.	2 E.	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	22	5 S.	2 E.	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	5 S.	2 E.	40
N. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	5 S.	2 E.	80
W. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	5 S.	2 E.	80
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	27	5 S.	2 E.	40
Total area				600

Tract No. 1 contains the Ardmore coal, which crops near the southwest side, dipping toward the northeast about 25°. It is believed that the inclination of the coal will change but little within the limit of the segregated land. The tract contains, approximately, 520 acres of coal.

	Acres.
Total area unleased segregated coal lands, Ardmore district..	600.00
Total area unleased segregated coal lands, Lehigh district ...	51,832.51
Total area unleased segregated coal lands, Lehigh-Ardmore districts	52,432.51

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., June 21, 1904.

Circular No. 5 of coal and asphalt lands in Lehigh-Ardmore district (No. 5) is respectfully returned to the Secretary of the Interior with recommendation that it be approved.

A. C. TONNER,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., June 23, 1904.

Approved.

E. A. HITCHCOCK,
Secretary.

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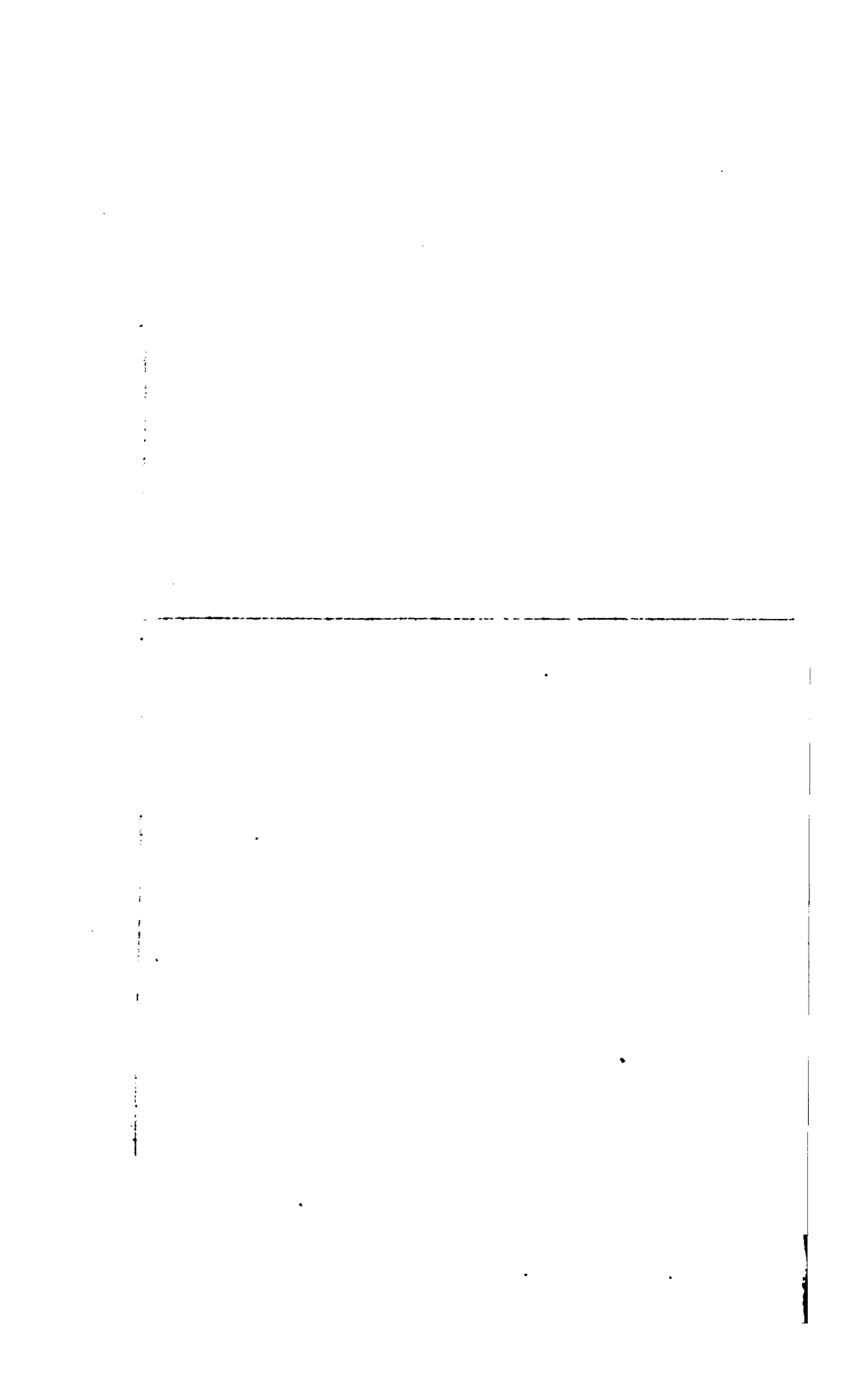


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From U. S. Geo





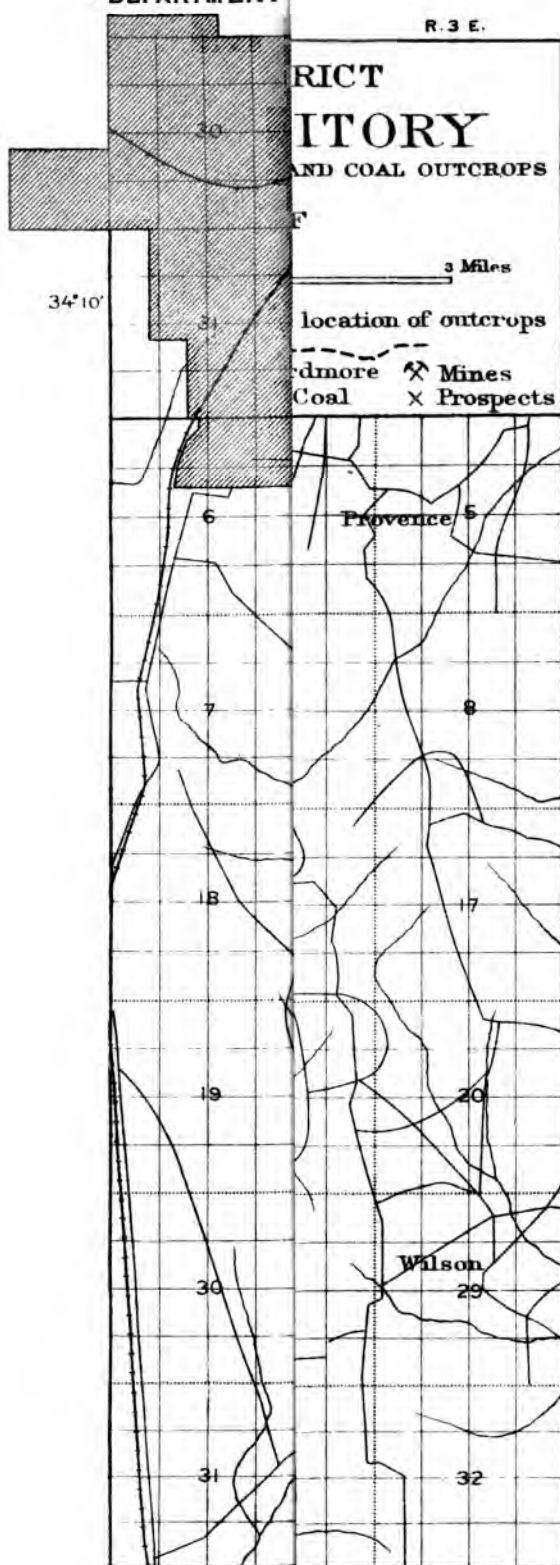
DEPARTMENT

R. 3 E.

DISTRICT

TERRITORY

AND COAL OUTCROPS



Tract Acres
1 600.00

T. 5 S.

From U. S. Geo

(Original.)

DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 6.

DESCRIPTION

OF THE

UNLEASED SEGREGATED ASPHALT LANDS

IN THE

CHICKASAW NATION, INDIAN TERRITORY.

BY

JOSEPH A. TAFF.

Bids for the purchase of tracts within this district will be opened by the Commissioner of Indian Affairs, at his office at Washington, D. C., at 2 o'clock p. m. (Eastern time) on Monday, August 7, 1905.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., June 20, 1904.

SIR: I have the honor to transmit herewith descriptive texts in duplicate of a report on the unleased segregated asphalt lands in the Choctaw and Chickasaw nations, Indian Territory, prepared by Mr. Joseph A. Taff, in accordance with instructions contained in your letter of May 16, 1904. It is proposed that this report be published as circular No. 6, for the information of those submitting bids in the sixth sale of unleased segregated coal and asphalt lands.

Very respectfully,

CHARLES D. WALCOTT,
Director.

HON. E. A. HITCHCOCK,
Secretary of the Interior.

DESCRIPTION OF UNLEASED SEGREGATED ASPHALT LANDS IN THE CHICKASAW NATION, INDIAN TERRITORY.

INTRODUCTORY REMARKS.

The conditions governing the location of asphalt lands are different from those relating to coal. Coal is a stratified deposit formed originally with the deposition of the rocks. It is simply a rock bed, and usually runs parallel with and is as extensive as ordinary rock beds with which it is deposited. Not so with bitumen or asphalt deposits. They either permeate irregularly a mass or beds of stratified and porous rock or fill fissures where the stratified rocks have been cleft. There is no means to determine how far the rock conditions which admit the presence of the bitumen or asphalt may continue beneath the surface or how far such deposits may extend if the conditions be favorable except by the use of the prospecting drill or by excavation. Fissures in the rocks which contain the species of hard asphaltum are irregular both in the bearing of their outcrop and in their direction and width downward. In any case it is not reliable to select asphalt lands for sale which extend beyond deposits actually proved either by natural or artificial exposure to be of commercial value, neither would it be just to the purchaser of such lands.

There are two classes of asphalt deposits in the Choctaw and Chickasaw nations. The most extensive is properly a bitumen or asphaltite permeating porous sandstone, limestone, and conglomerate, and when extracted has a semiliquid or viscous consistency. These deposits are considered to be exposed petroleum pools or exudations from such pools from which the lighter oils have escaped by near approach to the surface, leaving the heavy asphaltum base.

In some cases where the bitumen deposits are most liquid, it is necessary to evaporate some of the lighter oils in order to utilize the product as an asphaltum or for other commercial purposes.

The second and less extensive class of asphalt deposits in the Choctaw and Chickasaw nations is a solid resembling a high-grade coal. It fills fissures where the rock walls have been separated from a fraction of an inch to rarely 25 feet, and extends nearly vertically into the earth. These deposits are practically free from any foreign substance, and may be mined in the same manner as coal. They approach in composition and resemble in many respects species of hard asphaltites known as Albertite and Grahamite.

In accordance with an act of Congress (Public—No. 125) making appropriations for the current and contingent expenses of the Indian Department, and for fulfilling treaty stipulations with various Indian tribes for the fiscal year ending June 30, 1905, it is provided that only the unleased segregated asphalt lands be sold, leaving the leased lands until further provision of law.

All known commercially valuable asphalts found in lands in the Choctaw Nation, and all except that in three separate tracts in the Chickasaw Nation, Indian Territory, were covered by asphalt leases at the expiration of the time allotted by law in which these lands were to be segregated. These deposits in the unleased lands in the Chickasaw Nation belong to the viscous bitumen class described above, but they occur in different kinds of rocks and under somewhat different conditions of structure. The deposits and manner of occurrence in each tract are described below.

The tracts of unleased segregated asphalt lands being small and widely separated, it has not been considered advisable to publish maps showing their location. From the descriptions the segregated lands can be located on any township map of Indian Territory. Such maps are widely distributed by well-known map-publishing firms. For the benefit of those desiring to investigate and purchase the unleased asphalt lands in the Chickasaw Nation, Indian Territory, the location of the leased asphalt lands also are given. It is considered that the known relations of unleased to leased lands will have important bearing on the desirability and value of each. In all leased lands the asphalt has been extensively prospected and in many cases developed commercially.

Mr. George H. Eldridge, a member of the United States Geological Survey, expert in the investigation of asphalts, made a survey of the known deposits of asphalt in Indian Territory in 1899. His results, including the knowledge of the occurrence of asphalt deposits in other parts of the United States, entitled "The Asphalt and Bituminous Rock Deposits of the United States," were published in Part I of the Twenty-second Annual Report of the Survey.

DESCRIPTION OF TRACTS.

TRACT NO. 1.

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	25	3 S.	5 W.	40

The Tar Springs asphalt lease bounds this tract on the south and east and the deposit is apparently continuous through the tract and

lease. The deposit consists of a viscous or semiliquid bitumen impregnating a compact but unconsolidated sand. The bitumen forms the binding substance, adhering the sand grains. On extracting the bitumen the residue is a fine gray or white sand. The deposit lies flat or slightly inclined westward and is reported to be 4 to 6 feet thick. It is exposed near the northwest corner of the tract and is sufficiently near the surface to be mined by stripping over the entire area.

The Tar Springs Asphalt Company, operating on the adjoining lease, reports that the deposit yields on an average more than 10 per cent of bitumen. The bituminous sand is removed in scoops manipulated by horse power after stripping off the superimposed soft rock and soil. The bituminous sand weighs, according to the company's report, 2,800 pounds per cubic yard, and by the above estimate will yield 280 pounds of bitumen per cubic yard, or 1,390 to 2,080 short tons per acre. By the same estimate the output by measure would be 34,700 to 52,100 gallons per acre.

TRACT NO. 2.

	Section.	Township.	Range.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	2 S.	1 E.	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	2 S.	1 E.	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	2 S.	1 E.	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	11	2 S.	1 E.	40
Total area.....				160

Extending through this tract and through the adjoining lease of M. & A. Schneider there is a formation of sandstone striking nearly northwest and southeast and dipping toward the southwest between 75° and 90° . Through a thickness of approximately 20 feet this sandstone is highly impregnated with viscous or semiliquid bitumen. The bitumen exudes from the surface, making caked deposits of stiff asphalt at a number of places along the outcrop of the sandstone across the tract and on the adjoining lease. The deposit has been prospected in the southeast 40 acres of the tract, and recently a new extracting plant has been erected near the northwest corner of the Schneider lease, where considerable development has been accomplished. The richness of the bitumen deposit varies somewhat at the quarry, where the full thickness of the impregnated beds were exposed. It is reported by the company that the rock will yield 10 to 14 per cent of bitumen.

TRACT NO. 3.

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	1 S.	3 E.	40
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	1 S.	3 E.	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	20	1 S.	3 E.	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	1 S.	3 E.	40
Total area.....				160

A short distance north of the center of this tract in a bluff of Rock Creek there is a formation of fine, compact, but unconsolidated sand filled with viscous bitumen. Nearly 20 feet of this asphaltic sand is exposed and it extends downward to an unknown depth. Above it is a formation of limestone conglomerate, a part of which is impregnated with small quantities of bitumen of the same class as that found in the contiguous sand. This conglomerate belongs to a different geologic age from that of the asphaltic sand and lies unconformably or irregularly upon it, though as far as could be determined both formations are almost flat. Nearly 1 mile toward the east and near the south side of section 15 and the northeast corner of section 21 on the lease of the Rock Creek Natural Asphalt Company thick deposits of asphaltic sand of the same age and class as that in the tract come to the surface from beneath the limestone conglomerate. The limestone conglomerate makes the surface of the country between the tract and the lease, and it can not be determined except by the prospecting drill whether the asphaltic sand is continuous beneath.

The asphalt sand on Rock Creek has been prospected and developed in a small way by extracting the bitumen in open kettles. The percentage of bitumen is reported to be between 10 and 12 per cent. In the Rock Creek Natural Asphalt Company's lease it has been mined quite extensively and mixed with crushed asphaltic limestone, which occurs in large quantity in the vicinity. The limestone and sand act as a mastic in the crushed product used for street paving.

Tract No. 3 is about 3 miles southwest of Sulphur, located on a branch of the St. Louis and San Francisco Railroad, and 8 miles northeast of Dougherty, on the Gulf, Colorado, and Santa Fe Railroad.

**LOCATION OF LEASED SEGREGATED ASPHALT LANDS,
CHICKASAW NATION, IND. T.**

[Not for sale until further action of Congress.]

ELK ASPHALT COMPANY'S LEASE.

[Contains bitumen impregnating sand.]

	Sec- tion.	Town- ship.	Range.	Acres.
SW. $\frac{1}{4}$	2	2 S.	2 W.	160
SE. $\frac{1}{4}$	3	2 S.	2 W.	160
E. $\frac{1}{2}$	10	2 S.	2 W.	320
W. $\frac{1}{2}$	11	2 S.	2 W.	320
Total area				960

M. & A. SCHNEIDER'S LEASE.

[Contains bitumen impregnating hard sandstone.]

	Sec- tion.	Town- ship.	Range.	Acres.
All of	12	3 S.	1 W.	640
N. $\frac{1}{2}$	13	3 S.	1 W.	320
Total area				960

RAVIA ASPHALT COMPANY'S LEASE.

[Contains bitumen impregnating limestone, conglomerate, and sand.]

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	3 S.	5 E.	40.00
Lot 4	31	3 S.	5 E.	39.78
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	36	3 S.	4 E.	80.00
Lots 1 and 2	1	4 S.	4 E.	80.48
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	4 S.	4 E.	80.00
Lots 3, 4, and 5	6	4 S.	5 E.	118.53
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	4 S.	5 E.	40.00
Total area				478.79

**LOCATION OF LEASED SEGREGATED ASPHALT LANDS,
CHOCTAW NATION, IND. T.**

[Not for sale until further action of Congress.]

CHOCTAW ASPHALT COMPANY'S LEASE.

[Contains solid asphalt deposits.]

	Sec- tion.	Town- ship.	Range.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	1 S.	15 E.	40
E. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	1 S.	15 E.	80
W. $\frac{1}{4}$ of E. $\frac{1}{4}$	16	1 S.	15 E.	160
NE. $\frac{1}{4}$	21	1 S.	15 E.	160
N. $\frac{1}{4}$ of SE. $\frac{1}{4}$	21	1 S.	15 E.	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	21	1 S.	15 E.	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	21	1 S.	15 E.	40
W. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	1 S.	15 E.	80
E. $\frac{1}{4}$ of W. $\frac{1}{4}$	28	1 S.	15 E.	160
W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	1 S.	15 E.	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	1 S.	15 E.	40
Total area				960

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, July 5, 1904.

Circular No. 6 of the unleased segregated asphalt lands is respectfully returned to the Secretary of the Interior, with recommendation that it be approved.

A. C. TONNER,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., July 7, 1904.

Approved.

THOS. RYAN,
Acting Secretary.

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